M/023/0016
cc: Wayne

United States Department of Agriculture
Forest Service
Manti-La Sal National Forest
Supervisor's Office
599 West Price River Drive
Price, UT 84501
Phone # (435) 637-2817
Fax # (435) 637-4940

File Code: 2810
Date: January 15, 2013

Mr. Brent Sumsion
Property and Environmental Manager
SUNROC
730 North, 1500 West
Orem, UT 84057

Dear Mr. Sumsion:

Thank you for your notification dated December 27, 2012. It is the responsibility of SUNROC to complete any needed reclamation bonding, and mine plan approvals necessary from the Utah Division of Oil Gas and Mining (DOGM).

Under the Plan of 2003, Mining operations were approved from April 15 to December 1. After careful consideration, I am approving a one-time exception to timing restriction for the 2013 winter season to allow winter mining operations (we originally talked about avoiding late Feb-March) for inclusion in your DOGM approved plan of operations. I have considered impacts to wildlife including big game and nesting golden eagles and determined there would be no impacts to wildlife due to the current winter conditions with few big game animals in the immediate area and no known Golden Eagle nest areas nearby.

I am including a copy of the Environmental Assessment (EA), Decision Notice /Fining of No Significant Impact (DNFONSI), and the approved Plan of Operation and the Reclamation Plan.

I request that you work with Mr. Karl Boyer to update the operational plans so that necessary decisions can be made to accommodate future opportunity for mining operations for the Chicken Creek operations.

Sincerely,

ALLEN ROWLEY
Acting Forest Supervisor

cc: Paul Baker, Minerals Program Manager, Division Oil Gas and Mining

United States Department of Agriculture | Forest Service | Manti-La Sal National Forest

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599 West Price River Drive
Price, UT 84501
Phone # (435) 637-2817
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File Code: 2810
Date: January 27, 2003

Tony Christofferson
Environmental Manager
H.E. Davis Construction, Inc.
525 West Arrowhead Trail
Spanish Fork, UT 84639

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Dear Mr. Christofferson:

This letter is to inform you that the Plan of Operations and bond for the H.E. Davis Construction, Inc. Chicken Creek Gypsum Mine have been approved by the Forest Supervisor, Manti-La Sal National Forest. Enclosed is a signed copy of the Plan of Operations that authorizes you to conduct work as proposed and approved on National Forest System lands.

All operations on National Forest System lands must be conducted in conformance with Federal Regulations contained in 36 CFR 228, Subpart A and the approved Plan of Operations. Any changes to the Plan of Operations are subject to review and approval of the authorized Forest officer and may require increasing the bond. The operator must provide a minimum of 14 days notice to the District Ranger prior to commencing or suspending mining operations each season (not including general maintenance) so arrangements can be made for the Forest Service to conduct necessary wildlife surveys and inspections. In addition, 48 hours notice is needed prior to conducting blasting operations.

The bond amount will be reviewed periodically by the Forest Service and may be recalculated during the term of the Plan of Operations to address the cost of reclamation, and/or inflation. The operator is responsible for posting and maintaining adequate bonds in the amount determined by the Forest Service to assure reclamation of disturbed lands in the event of default by the operator.

Approval of this Plan of Operations does not constitute recognition or certification of ownership by any person named as owner herein. Nor does approval of this Plan of Operations constitute, now or in the future, recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.

Your proposed mining operations may also be subject to permitting by the State of Utah under appropriate State law and regulations. The Forest Service is obligated to forward copies of approved Plan of Operations and bond calculation worksheet to the Utah Division of Oil, Gas and Mining (DOGM) for their information. The Forest Service and DOGM have agreed not to hold duplicate bonds for the same work but that the bond amount must be adequate to meet the reclamation requirements of both agencies.

It is your responsibility to obtain any necessary authorizations for use of roads across private lands and/or under jurisdiction of Juab County.

If you have any questions contact Tom Shore, District Ranger, Sanpete Ranger District.

Sincerely,

ELAINE J. ZIEROTH
Forest Supervisor

Enclosures

cc:
Lowell Braxton, Utah Division of Oil, Gas and Mining
D-1, Tom Shore
D-2/3, Tom Lloyd

USDA, Forest Service

FS-2800-5 (7/95)
OMB NO. 0596-0022
EXPIRES: 07/31/98

PLAN OF OPERATIONS FOR MINING ACTIVITIES ON NATIONAL FOREST LANDS

Submitted by Harold E. Davis — President — July 29, 1997
Signature — Title — Date

Plan Received by _____ — _____ — _____
Signature — Title — Date

I. GENERAL INFORMATION

A. Name of Mine/Project Chicken Creek Mine

B. Type of Operation Placer
(lode, placer, mill, exploration, development, production, other)

C. Is this a (new/continuing) operation? (CIRCLE ONE)
If continuing a previous operation, this plan (replaces/modifies/supplements) a previous plan of operation. (CIRCLE ONE)

D. Proposed start-up date of operation September 15, 1997

E. Expected total duration of this operation Indefinite, depending on quantity of source.

F. If seasonal, expected date of annual reclamation/stabilization close-out _____

G. Expected date for completion of all required reclamation Upon conclusion of the mining operation

II. PRINCIPALS

A. Name, address and phone number of operator Harold E. Davis

525 West Arrowhead Trail Spanish Fork, Utah 84660 798-7355

B. Name, address and phone number of authorized field representative (if other than the operator). Attach authorization to act on behalf of operator.

Stanley L. Davis (801) 798 - 7355 Cellular (801) 361 - 7270

525 West Arrowhead Trail Spanish Fork, Utah 84660

C. Name, address and phone number of owners of the claims (if different than the operator):

(If more space is needed to fill out a block of information, use additional sheets and attach them.)

MANTI-LASAL NATIONAL FOREST
DISTRICT RANGER
EPHRAIM, UTAH
AUG 11 1997
RECEIVED

D. Name, address and phone number of any other lessees, assigns, agents, etc., and briefly describe their involvement with the operation, if applicable:

III. PROPERTY OR AREA

Name of claim, if applicable, and the legal land description where the operation will be conducted.

MC #	Name	Section	Township	Range
344083	Davis 3	34	14S	1E
344084	Davis 4	34	14S	1E

IV. DESCRIPTION OF THE OPERATION

A. **Access.** Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries, if applicable, and all access needs such as roads and trails, on and off the claim. Specify which Forest Service roads will be used, where maintenance or reconstruction is proposed, and where new construction is necessary. For new construction, include construction specifications such as widths, grades, etc., location and size of culverts, describe maintenance plans, and the type and sizes of vehicles and equipment that will use the access routes.

See Exhibit A

B. **Map, Sketch or Drawing.** Show location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

See Attatched Exhibit B

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

C. **Project Description.** Describe all aspects of the operation including mining, milling, and exploration methods, materials, equipment, workforce, construction and operation schedule, power requirements, how clearing will be accomplished, topsoil stockpiled, waste rock placement, tailings disposal; proposed number of drillholes and depths; depth of proposed suction dredging, and how gravels will be replaces, etc. Calculate production rates of ore. Include justification and calculations for settling pond capacities and, the size of runoff diversion channels.

H. E. Davis & Sons, Inc. has a 32 acre parcel of property between the road and the Davis 3 & 4 claims in Chicken Creek. This private property will be cleared and leveled for the purpose of locating a crusher unit. There is sufficient area to allow for the crusher, the material stock pile and the tailings pile.

We will typically mobilize the crushing operation sometime in October or November each year and run until April of the following year. We will be working from the South side of the Davis 3 & 4 claims in Chicken Creek proceeding North into the hill.

The crucher will be located at the base of the hill as close to the source of the material as possible.

We will drill and shoot approximately 150 holes, 14' deep, on a weekly basis. the blasted material will be pushed down the hill to the crusher for processing.

A quantity of approximately 30,000 tons of Gypsum will be mined and processed during the six month period. That processed material will then be stock piled on the private property for transportation during the remaining months of the year. Transportation consists of 2 truck/train units hauling 2 loads each per day, six days a week.

Reclamation will take place in the worked out areas upon completion of the mining process.

This mining operation will operate on a small scale (1000 tons per year) for the first three or four years and the crushing unit will not be located at this site during that period of time.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

D. **Equipment and Vehicles.** Describe that which is proposed for use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.

Cedar Rapids 22-36 Jaw crusher (125 tons per hour (TPH)), Symons 4' Cone crusher (125 TPH), Cay Mfg. 5' X 16' Incline screen (125 TPH), D8 Dozer, 966 Front end loader, Track drill, Trackhoe with breaker. The hours of operation will typically be 7am to 5pm monday - friday and 7am to 1 pm on saturday.

See exhibit B for a typical crusher layout

E. **Structures.** Include information about fixed or portable structures or facilities planned for the operation. Show locations on the map. Include such things as living quarters, storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipe lines, water diversions, trailer, sanitation facilities including sewage disposal, etc. Include engineering design and geotechnical information for project facilities, justification and calculations for sizing of tanks, pipelines and water diversions, etc.

The only structure that will be located at the site will be a powder magazine.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. **Air Quality.** Describe measures proposed to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.

This crushing operation will be operate during the winter months. Due to the amount of moisture that is typically present due to snowfall etc. there is seldom a need to use water to supress the emissions coming from the crusher or the haul roads. however if the need were to arise we have water trucks and spray equipment to eliminate the problem.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

B. **Water Quality.** State how applicable state and federal water quality standards will be met. Describe measures or management practices to be used to minimize water quality impacts and meet applicable standards.

1. State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities.

2. Describe methods to control erosion and surface water runoff from all disturbed areas, including waste and tailings dumps.

3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.

4. Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.

5. If land application is proposed for waste water disposal, the location and operation of the land application system must be described. Also describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.

This will be a dry crushing process. Due to the fact that this operation be running in the winter months we do not anticipate the need to use water for the supression of dust from the crusher or on the haul roads. There is no water present on the site and all surface areas will be sloped to allow for natural drainage. All exposed surfaces will be reclaimed upon conclusion of the mining process.

C. **Solid Wastes.** Describe the quantity and the physical and chemical characteristics of solid waste produced by the operation. Describe how the wastes will be disposed of including location and design of facilities, or treated so as to minimize adverse impacts.

The only solid waste produced by this operation will be the Gypsum tailings, which will be place in a storage pile on the private ground.

D. **Scenic Values.** Describe protection of scenic values such as screening, slash disposal, or timely reclamation.

Preservation of scenic values will take place through reclamation of exposed surfaces upon completion of the mining process. Also we will hold the size of the exposed areas to approximately 200' X 200' in size to eliminate unneeded surface exposure.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

E. **Fish and Wildlife.** Describe measures to maintain and protect fisheries and wildlife, and their habitat (includes threatened, endangered, and sensitive species) affected by the operations.

N/A

F. **Cultural Resources.** Describe measures for protecting known historic and archeological values, or new sites in the project area.

N/A

G. **Hazardous Substances.**

1. Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents.

The only hazardous materials that will be present at this site will be the blasting agents and #2 diesel. These materials will only be present during the time of operation.

2. For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification (signing/labeling), or other special operations requirements necessary to conduct the proposed operation.

BLASTING AGENTS: Delivered monthly by the licensed sales agency in their own vehicles which are properly secured and labeled. They are stored in a MSHA approved powder magazine which is located on the site.

#2 DIESEL: Delivered upon request by the licensed sales agency in their own vehicles which are designed and labeled to carry and identify the contents. Storage is in a above ground storage tank which is surrounded by a berm to contain possible spillage.

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

3. Describe the measures to be taken for release of a reportable quantity of a hazardous, or the release of a toxic substance. This includes plans for spill prevention, containment, notification, and cleanup.

The fuel tank will be placed inside a bermed area to contain any potential spillage and thus reduce the areas of possible exposure.

H. **Reclamation.** Describe the annual and final reclamation standards based on the anticipated schedule for construction, operations, and project closure. Include such items as the removal of structures and facilities including bridges and culverts, a revegetation plan, permanent containment of mine tailings, waste, or sludges which pose a threat of a release into the environment, closing ponds and eliminating standing water, a final surface shaping plan, and post operations monitoring and maintenance plan.

Topsoil will be stripped and stock piled for use in reclamation of the project upon completion of the mining process. Upon completion of the mining operation the topsoil will be replaced and re-seeding will be done to provide vegetation and eliminate the possibility of erosion in the area. Prior to the reseeding all surface areas will be sloped to allow for natural drainage.

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Required changes/modifications/special mitigation for plan of operations: _____

(If more space is needed to fill out a block of information, use additional sheets and attach to form.)

B. **Bond.** Reclamation of all disturbances connected with this plan of operations is covered by Reclamation Performance Bond No. _____, dated _____, signed by _____ (Principal) and _____ (Surety), for the penal sum of _____. This Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the plan of operations. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

The bond amount for this Reclamation Performance Bond was based on a bond calculation worksheet. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operations or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations.

Should the bond delivered herewith, or any bond delivered hereafter in connection with this plan of operations, no longer be in effect, the operator shall, within 30 calendar days of receipt of the Forest Service demand, furnish a new bond satisfactory to the Forest Service. Until such time that a satisfactory bond is received by the Forest Service, no further operations other than reclamation activities will be allowed.

Acceptable bond securities (subject to change) include:

1. Negotiable Treasury bills and notes which are unconditionally guaranteed as to both principle and interest in an amount equal at their par value to the penal sum of the bond; or
2. Certified or cashier's check, bank draft, Post Office money order, cash, assigned certificate of deposit, assigned savings account, blanket bond, or an irrevocable letter of credit equal to the penal sum of the bond.

TERMS AND CONDITIONS

A. If a bond is required, it must be furnished before approval of the plan of operations.

B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules and regulations.

C. Approval of this plan of operations does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.

D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules or regulations.

E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.

F. This plan of operations has been approved for a period of _____ or until _____. A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

OPERATING PLAN ACCEPTANCE:

I/We have reviewed and agree to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements. I/We understand that the bond will not be released until the Authorized Officer in charge gives written approval of the reclamation work.

Kay J. Christofferson — Operator (or Authorized Representative)

18 Sept. 02 — (Date)

OPERATING PLAN APPROVAL:

Aaron L. Howe — (Name)

Acting Forest Supervisor — (Title)

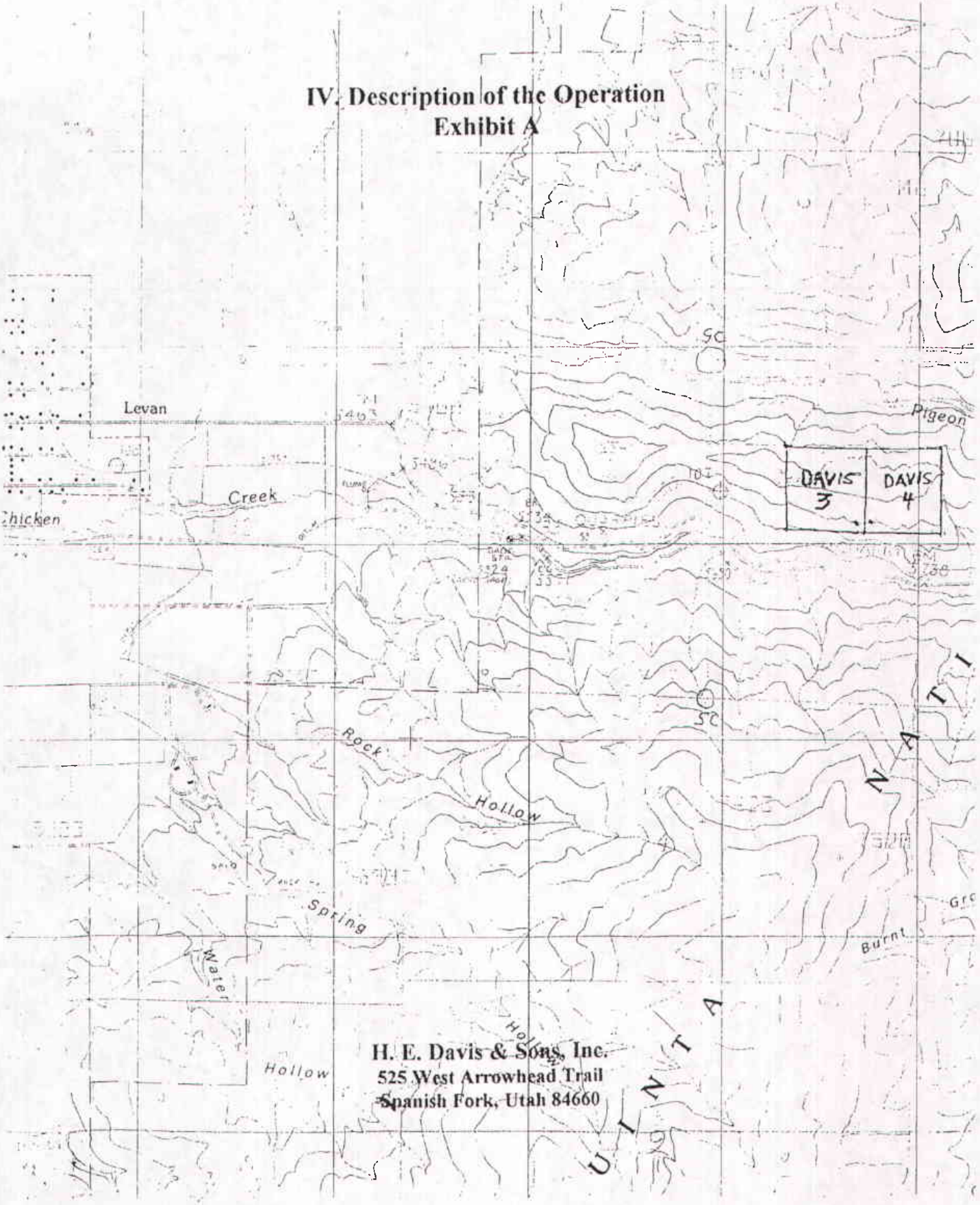
Aaron L Howe — (Authorized Officer)

Jan. 27, 2003 — (Date)

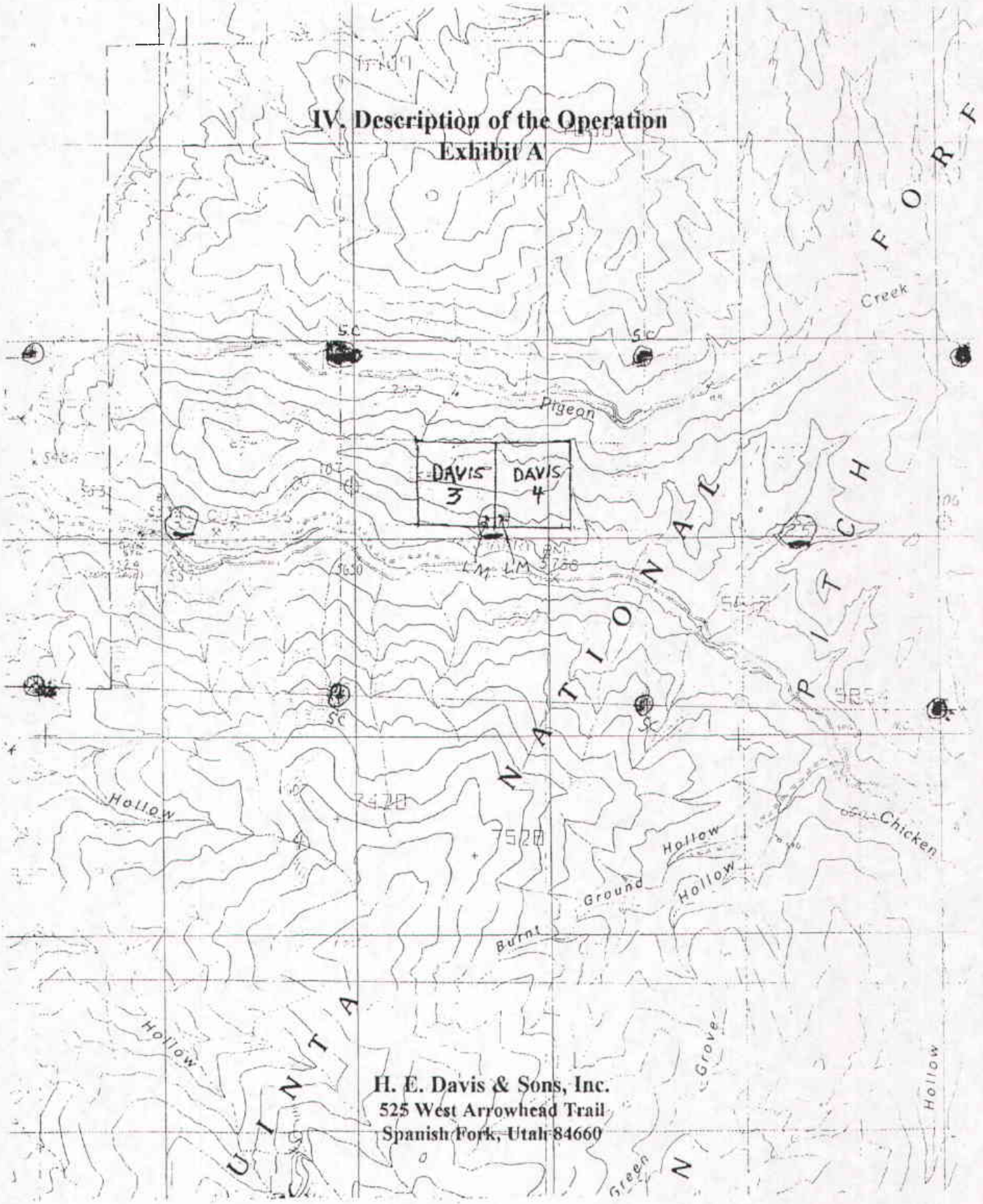
Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0596-0022), Washington, D.C. 20503.

Includes Reclamation Plan, September 1999 (attached) KH
Supplement/Amendment to Plan of Operations 07/19/02

IV. Description of the Operation
Exhibit A

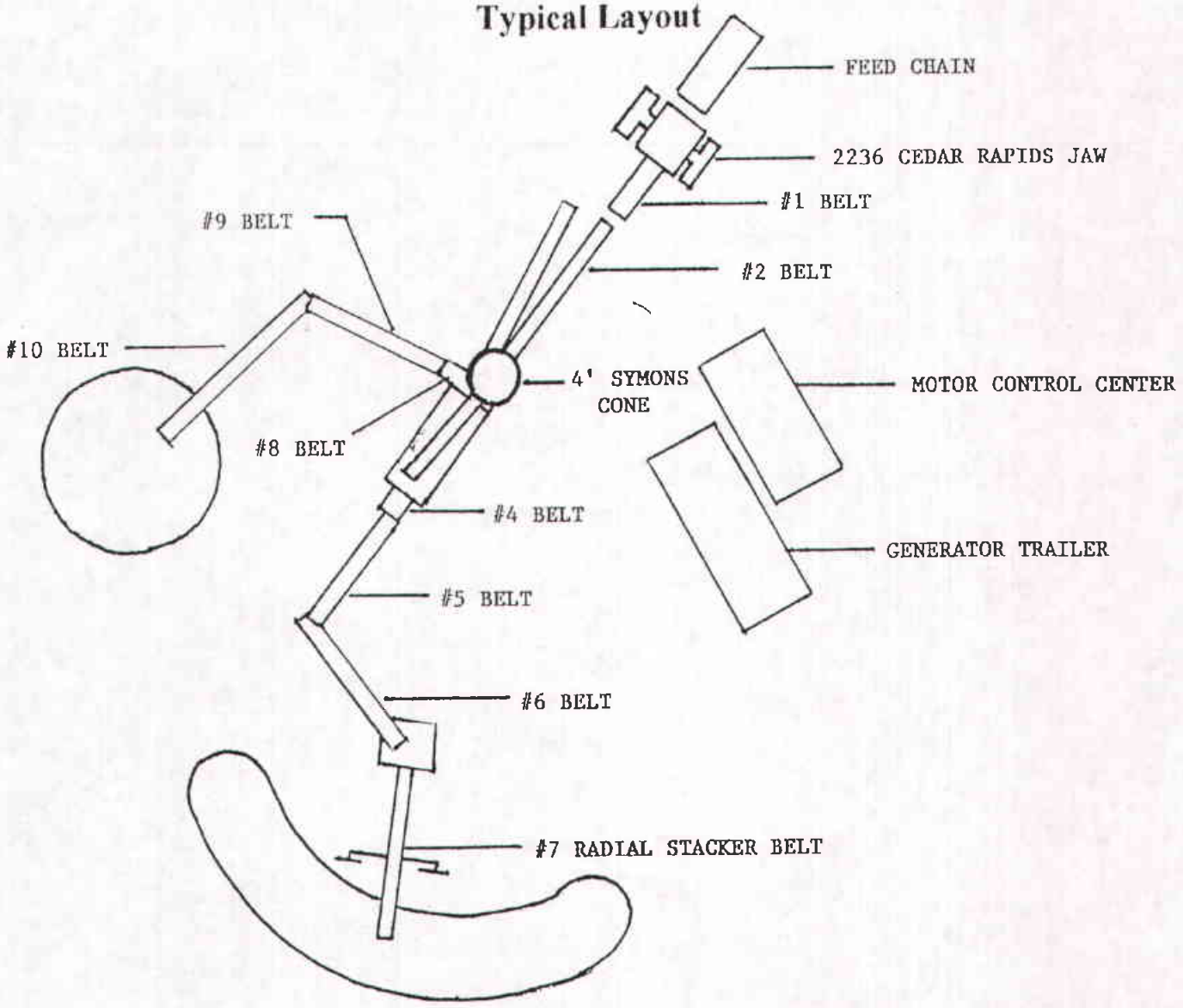


H. E. Davis & Sons, Inc.
525 West Arrowhead Trail
Spanish Fork, Utah 84660



DAVIS #3 UMC #344083 SE¼ NW¼ SEC. 34 T14S R1E SLBM
DAVIS #4 UMC #344084 SW¼ NE¼ SEC. 34 T14S R1E SLBM

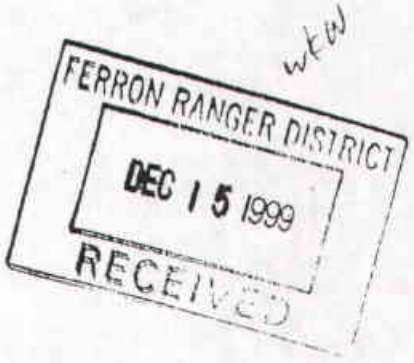
IV. Description of the Operation
Exhibit B
Typical Layout



H. E. Davis & Sons, Inc.
525 West Arrowhead Trail
Spanish Fork, Utah 84660

CHICKEN CREEK GYPSUM MINE

EXHIBIT 8



RECLAMATION PLAN

SEPTEMBER 1999

Prepared for:

Harry E. Davis & Sons
525 West Arrowhead Trail
Spanish Fork, Utah 84660

Prepared by:

Leland J. Davis
Consulting Geologist
2060 Ribbon Lane
Salt Lake City, Utah 84117
801-277-0106

GENERAL INFORMATION

Harry E. Davis & Sons has 32 acres of property between the Chicken Creek Canyon road and the Davis 3 & 7 mining claims. This private property has a Gypsum outcrop approximately 200 ft. wide on a steep slope of Chicken Creek Canyon. The Gypsum outcrop is located 3 miles east of Levan, Utah in Section 34, Township 14 South Range 1 East. The Gypsum deposit is in the Aropien formation, the same formation that H.E. Davis & Sons are mining 5 miles south of Levan.

MINING OPERATION

H. E. Davis & Sons will mobilize the crushing operation sometime in October or November of each year and run until April of the following year. They will be working from the South side of the Davis 3 & 7 claims in Chicken Creek proceeding North into the hill. The crusher will be located at the base of the hill as close to the source of the material as possible. (See map #1).

They will drill and shoot approximately 150 holes, 14' deep, on a weekly basis. The blasted material will be pushed down the hill to the crusher for processing.

A quantity of approximately 30,000 tons of Gypsum will be mined and processed during the six month period. That processed material will then be stock piled for transportation during the remaining months of the year. Transportation consists of 2 truck/train units hauling 2 loads each per day, six days a week.

RECLAMATION DURING MINING OPERATIONS

1. A 15° percent road grade "trackway" approximately 2,500 feet long will be constructed from the main road in Chicken Creek Canyon across private land and forest land to the top of the Gypsum outcrop. (See Map #2). All excavated material will be transported off the slope to form a catch basin dam at the base of the trackway. Excess material will be transported to a waste stockpile (See map #1).

2. The trackway will be sloped inward with water flow being discharged into a sediment basin. Discharges from the basin will be into a natural drainage.

3. To prevent down cutting on the inside of the trackway, rock check dams will be constructed at twenty foot intervals.

4. Reclamation of disturbed areas will include seeding with an approved seed mixture as disturbance occurs.

5. H.E. Davis & Sons will follow all requirements for use and storage of hazardous materials including fuel and engine oils.

6. They will use good housekeeping on the site and dispose of any garbage according to the local requirements and do everything possible to protect the water quality of Chicken Creek.

7. Access trackway failures will be promptly reclaimed and be reseeded as appropriate under direction of the Forest Officer in charge.

8. Hazardous section of highwall will be removed prior to shutdown of operations for more than one week.

9. Topsoil will be pushed off to the side of the Gypsum ore body where encountered and will be pushed back onto benches and around the pit backwall area.

RECLAMATION PLAN UPON COMPLETION OF THE MINING OPERATION

1. Highwalls will be 1/4:1 slope; 30' vertical maximum, with a 15 foot wide bench every 30 vertical feet. Whenever possible, topsoil will be placed on the bench.

2. The access trackway will be water barred and then undercut following operations allowing the backslope to slough and reach its angle of repose. At 100 foot intervals, material will be pulled down completely across the entire surface to preclude the trackway being used as a motorized trail.

3. Disturbed areas will be recontoured where practical.

4. All disturbed area including the benches and trackway will be reseeded with the following seed mixture:

Grass

Agropyron cristatum	Crested wheat grass (Ephraim)	3
Agropyron intermedium	Intermediate wheat grass	2
Dactylis glomerata	Orchardgrass	1
Oryzopsis hymenoides	Indian ricegrass	1
Agropyron Smithii	Bluestem wheatgrass	2
Lolium perenne	Perennial ryegrass	2

Forbs

Melilotus officinalis	Yellow sweetclover	1
Medicago sativa - Ladak	Alfalfa	1
Aster glaucodes	Blueleaf aster	½
Hedsarum boreale	Northern sweetvetch	½
Sanguisorba minor	Small burnet	1
		15 lbs/Ac

Reclamation success will be judged using the following standard: Revegetation will be considered successful when 80 percent of the pre-disturbance ground cover is re-established over the entire disturbed area. Adjacent undisturbed areas will be used as a base for comparison, unless a specific reference area is established for comparison or a survey is completed to establish the pre-disturbance ground cover on the actual disturbed site. Ground cover will include:

1. Live perennial basal herbaceous vegetation.
2. Accumulated dead plant litter.
3. Rock fragments over 3/4 inch diameter.

Note: The allowed contribution of rock fragments to the overall required ground cover will be established on a site-specific basis considering the pre-disturbance or reference area conditions of the vegetative ground cover. A minimum of 90 percent must consist of seeded or other desirable species with no noxious weed species.

An open channel will be left in the drainage bottom so ephemeral flows will be directed into the natural channel, not causing an under cutting of natural or reclaimed banks or head cutting.

Drainage on the reclaimed slopes will be directed away from the disturbed areas.

The following are additional standards an operator is to incorporate into his plan of operations. From the Manti-LaSal Land and Resource Management Plan.

Standard Forest Service Mitigations derived from Appendix B, page B-1 of the Manti-La Sal Land and Resource Management Plan (Alternative C continued):

1) Approval of the Plan of Operations does not constitute recognition or certification of the validity of ownership by any person named as owner herein.

2) Approval of this Plan of Operations does not constitute now or in the future, recognition or certification of the validity of any of the mining claims to which it may be related nor the mineral character of the land on which it lies.

3) Changes and additions to the approved Plan of Operations must be submitted to the District Ranger for approval as a revised or supplemental plan. The revised or supplemental Plan of Operations must be approved by the District Ranger before work may begin.

4) The operator shall furnish and maintain a reclamation bond in the amount of $—— conditioned upon compliance with the terms and conditions of approval of the Plan of Operations. (Note: Reclamation does not include fire liability or other action in connection with the operator.)

5) The District Ranger must be notified of the intent to establish a temporary camp or living quarters for company employees or contractors on National Forest. Approval must be obtained form the District Ranger prior to construction or occupancy of such facilities.

6) All surface disturbing activities and operations must be supervised by a company representative knowledgeable of the terms and conditions of approval of the Plan of Operations.

7) Section corners or other survey markers within the project area must be flagged for preservation prior to commencement of surface disturbing operations. The removal, displacement, or disturbance of markers must be approved by the proper authority.

8) All surface disturbing operations must cease in the event that archeological or cultural resources are unearthed or discovered. The District Ranger or his/her designated representative must be immediately notified of the situation. Operations may again commence upon Forest Service approval.

9) Harassment of wildlife and livestock is prohibited.

10) The operator is responsible for immediate repairs of any and all damages to roads, structures, and improvements, which result from his/her operations, at his/her own expense.

11) Gates and livestock fences must be kept closed unless otherwise posted.

12) All equipment and debris must be removed from the National Forest upon completion of operations. All trash and garbage must be properly disposed of at an approved refuse area. Disposal or burial of any such materials in mud pits or other areas, or by burning, on the National Forest is prohibited.

13) Water must be legally obtained in accordance with State water laws.

14) Vehicle operators must maintain safe speeds commensurate with existing road traffic and weather conditions.

15) Removal of vegetation must be limited to that necessary for operations. Removal or trimming of trees must be avoided whenever possible.

16) Adequate fire suppression equipment must be readily available to employees and contractor at the project site. This would include at least one hand-held implement per person consisting of shovels and axes and one fire extinguisher per vehicle.

17) All motorized equipment will have working mufflers and spark arresters. Electrical equipment must be properly insulated. Vehicles equipped with catalytic converters will be parked in clear areas to avoid igniting potential fuels such as grass and brush.

18) The District Ranger or his/her designated representative must be notified when operations are completed and informed as to when reclamation work will begin.

Legal and Regulatory Requirements (Alternative C continued):

1) The operator is responsible for compliance with all applicable State and Federal Laws and regulations.

2) The operator is responsible for compliance with the Forest Service regulations for locatable minerals 36 CFR Part 228, subpart A. These regulations contain requirements for environmental protection, safety, cessation of operations and annual reporting, fire prevention, access, bonding, and other aspects of locatable mineral development on National Forest System Lands.

Additional Mitigation Measures (Alternative C continued):

1) This mining activity will be monitored using pellet trend studies and should significant disturbance occur to wintering wildlife, then the mining activity will be limited to the period of April 15, thru November 30. Significant disturbance is defined as 50 percent less use occurring in the immediate project area because of the mining activity.

2) The eagle nest in the SW 1/4 of Section 34 will be monitored beginning February 1 each year. If a pair of eagles occupies this nest, the DWR and USFWS will be notified and consulted on an appropriate course of action.

   The mine operator will be required to notify the Forest Service when they observe eagle activity.

3) Dust abatement will be implemented on roads if it becomes a problem.

4) Garbage must be removed from the site regularly and disposed of in an approved landfill.

5) No trespassing signs and a gate will be erected to control public access for safety and security reasons.

Comparison of Alternatives - Under the circumstances involving approval of a mining plan of operations it suffices to say that Alternative C has been formulated to specifically address special watershed, reclamation, wildlife and safety concerns that have surfaced during the analysis process and would require the operator to incorporate these additional mitigation measures into his plan of operations. It is intended to be an improvement over Alternative B and would result in the most acceptable conditions under which the plan could be approved.

Supplement/Amendment to Plan of Operations
H.E. Davis
Chicken Creek Gypsum Mine

EXHIBIT #97

I hereby agree to the terms of the reclamation performance bond submitted herewith and agree to the following statement:

The bond amount will be reviewed annually and may be recalculated during the term of this proposed plan of operations to address response to changes in the operations, the environmental impacts of the operation, the cost of reclamation or inflation. The operator agrees to furnish an updated bond based on the updated calculation within (30 days, or other period) of notification of the new bond amount.

Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the plan of operations. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

The bond amount for this Reclamation Performance Bond was based on a bond calculation worksheet. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operations or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations.

H.E. Davis Construction, Inc.

Kay J. Christoffersen, President
Operator

19 July 02
Date

DECISION NOTICE/FINDING OF NO SIGNIFICANT IMPACT

DAVIS #3 AND #4 MINING CLAIMS
CHICKEN CREEK GYPSUM MINE
JUAB COUNTY, UTAH

INTERMOUNTAIN REGION
MANTI-LA SAL NATIONAL FOREST
SANPETE RANGER DISTRICT

Responsible Agency:

USDA Forest Service
Manti-La Sal National Forest
Price, Utah 84501

Responsible Official:

Elaine J. Zieroth, Forest Supervisor
Manti-La Sal National Forest
599 West Price River Drive
Price, Utah 84501
(435) 637-2817

For further information contact:

Brian McClelland, Geologist
Ferron-Price Ranger District
115 West Canyon Road, P.O. Box 310
Ferron, Utah 84523

Chicken Creek Gypsum Mine

Decision Notice and Finding of No Significant Impact

USDA Forest Service, Intermountain Region
Manti-La Sal National Forest
Sanpete Ranger District
Juab County, Utah

I. INTRODUCTION

The quarry is located north of Chicken Creek along the west flank of the San Pitch Mountains in Section 34, T14S., R1E., SLM, Juab County, Utah, on a portion of the Uintah National Forest that is administered by the Sanpete Ranger District of the Manti-La Sal National Forest.

Operations are currently being conducted on private lands owned by H.E. Davis. The proposal involves extending the quarry northward higher on the canyon slope to mine gypsum deposits on National Forest System lands. Estimated total disturbed area, including the private land, would be 4.6 acres.

An Environmental Assessment (EA) that discussed a proposal by H.E. Davis & Sons Inc. to extend their gypsum mining operations into Davis # 3 & 4 mining claims and onto National Forest System lands was released for public review and comment on December 11, 2001.

II. DECISION

I have decided to select Alternative B as described in the Environmental Assessment, which is summarized as follows.

> The Forest Service would approve the Plan of Operations authorizing the H.E. Davis & Sons Company to conduct gypsum mining activities by incorporating mitigation measures needed to protect National Forest resources. This alternative includes a properly engineered trackway access route, erosion and sedimentation control, wildlife monitoring, and reclamation.
>
> Originally, the road first proposed by the operator would most likely have failed given the highly erosive soils and steep slope (30-70%) of the project area. However, a trackway was proposed to replace the road in Alternative B. It then was adopted by the operator in the Plan of Operations /Reclamation Plan which virtually eliminated these concerns. Erosion and subsequent sedimentation would be contained within the project area while sediment catch basins would reduce sediment contributions to the adjacent undisturbed areas and Chicken Creek down to negligible levels relative to existing conditions. Mitigation measures/requirements require end-hauling of the fill material during the construction phrase (rather than pushing over the outslope side).

Drainage structures (rock check dams) would be constructed every 20 feet on the trackway and the end-hauled material would be stored at the quarry bottom on private land for reclamation recontouring purposes. There would be sediment catch basins on the private land to catch and properly dissipate runoff. There would be no mine road berms to fail since a trackway does not have to meet the parameters of MSHA regulations. Recontouring the disturbance during reclamation would be less difficult since there would be fill material available to recontour back to the original slope.

Mining activities are proposed to begin in the winter of 2002-2003 and to continue on a yearly basis.

III. RATIONALE FOR THE DECISION

The decision was made after careful consideration of the contents of the Environmental Assessment, public involvement, and the entirety of the supporting record. No one fact or single piece of information led to my decision. Rather, a combination of factors contributed to it. I have summarized some of my key considerations in the following sub-parts.

Relationship to the Purpose and Need: My decision is responsive to the Purpose and Need by approving the Plan of Operation, which allows the mining of gypsum from the claims for sale of the product at a profit. The gypsum will be used primarily for dry wall and fertilizer. The claim holder has the right to develop the mineral resource, specifically gypsum, by the United States mining laws (30 U.S.C. 21-54): however, the operations shall be conducted so as to minimize adverse impacts on the National Forest System surface resources according to 36 CFR part 228 subpart A, and be consistent with the Land Resource and Management Plan, Manti-La Sal National Forest, 1986. Management goals for mineral resources as stated in the Land and Resource Management Plan (p. III-4) are to "provide appropriate opportunities for and manage activities related to development and production of mineral resources" and to "ensure that adequate reclamation of disturbed areas is accomplished."

Relationship to Other Alternatives Considered: The No Action Alternative (Alternative A) would be "non-approval" of the Plan of Operations and subsequently no mining on federal lands. This is not a legal alternative, as the claim holder has a right under the 1872 mining law to develop this locatable mineral resource (30 U.S.C. 21-54), considering that the operation is designed to minimize environmental effects consistent with 36 CFR 228, Subpart A.

It is required by the CEQ regulations and is used as a basis for comparison of alternatives with current conditions and trends.

Relationship to Issues: I have reviewed and considered the issues and concerns identified during the scoping process and those developed internally during preparation of the Environmental Assessment. The identified issues of (1) soil erosion from the disturbed areas affecting water quality of Chicken Creek, (2) loss of winter range for Mule Deer, (3) disturbance to nesting Golden Eagles, and (4) impact to visual quality have been adequately addressed in the chapter 2 and 4 of the EA and incorporated in Alternative B. Issues that would be resolved

through mitigation and design include (1) safety, (2) noxious weeds, (3) cultural resources, (4) recreation, and (5) air quality have been outlined on pages 5 and 6 of the EA.

Relationships to Laws and Regulations: This decision is consistent with applicable laws, regulations, and policies (refer to Section VII of this document).

IV. SUMMARY OF ALTERNATIVES CONSIDERED

Two alternatives were considered in detail and analyzed in the Environmental Assessment.

Alternative 1 – No Action

Under this alternative the plan of operations is not approved, subsequently there is no mining (EA, page 7). This is probably not a legal alternative since the claim holder has a right under the 1872 mining law to develop this locatable mineral source (30 USC 21-54).

Alternative 2 – Approve the Plan of Operations

Under Alternative B, the operator has incorporated mitigation measures that address the environmental concerns. Such measures include storing gypsum tailings on private ground, sloping of surfaces to allow natural drainage, storage of blasting powder in MSHA approved powder magazines, containment berms for fuel tanks, proper storage and handling of stripped topsoil, and reclaiming and reseeding of exposed mine surfaces upon mine closure.

V. PUBLIC INVOLVEMENT

A Public Involvement Plan (Appendix E of the EA) was developed for this project. Scoping consisted of a notice in the Forest's Schedule of Proposed Actions; notices of availability in the *Sun Advocate* on December 11, 2001, in the *Nephi Times* on December 12, 2001, and in *The Pyramid* newspaper on December 13, 2001. Contacts were also made by letter to 11 individuals and organizations who have expressed interest in this type of proposed project.

The project was also discussed internally. An interdisciplinary (ID) team consisting of the Ferron office geologist and 10 specialists from the Forest Supervisor's office and the Ferron-Price Ranger District completed the analysis of the proposal and documented the analysis, completing the work in December, 2001. The Forest wildlife biologist has reviewed the proposed project and contributed information about wildlife and threatened and endangered species. The Forest archaeologist provided necessary State Historic Preservation Office coordination and review of site inventories and compliance. Other forest personnel have reviewed the project and have provided additional comments on the project and the analysis process.

One response was received during the review and comment period which came from the Utah Environmental Congress (UEC). The UEC listed approximately 13 concerns in their letter (see UEC letter 1-16-02, attachment 1). Their concerns were addressed with a detailed Forest Service response (attachment 2).

10. Consideration of Whether the Action Threatens a Violation of Law or Requirement Imposed for the Protection of the Environment. To the best of my knowledge, this decision does not threaten violation of any laws and regulations imposed for the protection of the environment (refer to Section VII of this document).

VII. FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

To the best of my knowledge, this decision complies with all applicable laws and regulations. In the following, I have summarized the association of my decision to some pertinent legal requirements.

National Forest Management Act of 1976: the Forest Plan was approved November 5, 1986, as required by this Act. This long-range land and resource management plan provides guidance for all resource management activities on the Forest. The National Forest Management Act requires all projects and activities to be consistent with the Forest Plan. The Forest Plan has been reviewed in consideration of this project.

National Historic Preservation Act: Compliance with this Act and the American Indian Religious Freedom Act are addressed in Section VI of this document. This decision will have a "No Effect" on cultural resources.

Endangered Species Act: Compliance with this Act is addressed in Section VI of this document. Both the original and updated BE/BA's concur that there would be no known effects to endangered species.

National Environmental Policy Act: The entirety of documentation for this project supports that the project complies with this Act.

Environmental Justice: Based on experience with similar projects on the Ferron-Price Ranger District, it is believed that this project would not have any disparate impacts on individual groups of people or communities. Implementation of this project will produce no adverse effects on minorities, low-income individuals, Native Americans, or women. No civil liberties will be affected.

VIII. APPEAL PROVISIONS AND IMPLEMENTATION

This decision is subject to appeal pursuant to Forest Service regulations at 36 CFR 215.7. Any written appeal must be postmarked or received by the Appeal Deciding Officer within 45 days of the publication of this notice in the *Sun Advocate*. The Appeal Deciding Officer is: Regional Forester, Intermountain Region, 324 - 25th Street, Ogden, Utah 84401. Appeals must meet the content requirements of 36 CFR 215.14.

This decision is also subject to appeal pursuant to 36 CFR 251.82. Notice of appeal must be postmarked or received by the Appeal Reviewing Officer within 45 days of the date of this decision. A notice of appeal, including the reasons for appeal, must be filed with the Regional Forester, Intermountain Region, Federal Building, 324 – 24th Street, Ogden, Utah 84401. A copy

of the notice of appeal must be filed simultaneously with Elaine Zieroth, Forest Supervisor, Manti La Sal National Forest, 599 West Price River Drive, Price, Utah 84501. Appeals must meet the content requirements of 36 CFR 251.90.

IX. CONTACT PERSON

For additional information concerning this decision or the Environmental Assessment, please contact Brian McClelland at the Manti-La Sal National Forest Supervisor's Office (address: 599 West Price River Drive, Price, UT 84501, telephone: 435-636-3521).

X. SIGNATURE AND DATE

Elaine J. Zieroth

ELAINE ZIEROTH
Forest Supervisor
Manti-La Sal National Forest

July 1, 2002
Date

ENVIRONMENTAL ASSESSMENT

DAVIS 3 & 4 MINING CLAIMS

CHICKEN CREEK GYPSUM MINE

PLAN OF OPERATIONS

INTERMOUNTAIN REGION

MANTI-LA SAL NATIONAL FOREST

SAN PETE RANGER DISTRICT

Revised November 2001

JUAB COUNTY, UTAH

Responsible Agency:

USDA Forest Service
Manti-La Sal National Forest
Price, Utah 84501

Responsible Official:

Elaine J. Zieroth, Forest Supervisor
Manti-La Sal National Forest
599 West Price River Drive
Price, Utah 84501
(435) 637-2817

For Further information contact:

Thomas H. Shore, District Ranger
Sanpete Ranger District
540 North Main 32-14
Ephraim, Utah 84627

CHAPTER 1

PURPOSE AND NEED

A. INTRODUCTION

This chapter presents the project proposal, the purpose and need for the proposal, the decisions to be made, public involvement efforts (scoping), and the resulting issue identification.

H.E. Davis and Sons, Inc. of Spanish Fork, Utah submitted a Plan of Operations to extend his gypsum mining operations on his Davis 3 & 4 claims (Chicken Creek Mine) onto National Forest System lands. The Chicken Creek Mine and proposed extension are located within the San Pitch Division of the Uinta National Forest administered by the Sanpete Ranger District. The Claims are located on the north slope of Chicken Creek Canyon in Section 34, T.14 S., R. 1 E., SLM, in Juab County (refer to location maps, Appendix A). Estimated total disturbed area, including the private land, would be approximately 4.6 acres.

B. PROPOSED ACTION

The Manti-La Sal National Forest proposes to approve the plan of operations with mitigations/conditions to minimize adverse affects to environmental resources.

Limited operations at the Chicken Creek Mine are currently underway on H.E. Davis and Son's 32-acre parcel of private land in Chicken Creek between the county road and their claims that lie on National Forest System lands. The crushing operation, ore stockpile, and waste rock pile would be located on the private land adjacent to the road in the bottom of the canyon. The proposal would extend the existing quarry northward onto National Forest. The company plans to construct a trackway (rather than a road, which would need to be constructed to Forest Service and MSHA standards) for equipment access to the top portion of the claims for the purpose of drilling ore samples and to facilitate the ongoing operation. The trackway would come in from the east across private land owned by Levan Land and Livestock Company. H.E. Davis has made arrangements for an easement for this portion of the access route. A section of the trackway on the National Forest System lands would eventually be part of the area excavated by the pit. The remainder of the trackway would be rehabilitated and abandoned following operations according to the Plan of Operation submitted by the operator. The company would operate annually from October to April for an estimated period of 10 years.

About 150 shot holes, 14 feet deep, could be drilled and blasted on a weekly basis. The blasted material would then be pushed down the hill off National Forest System Land and into the crusher for processing on private land. Approximately 30,000 tons of gypsum would be mined annually and would be processed during a six-month period. The processed material would then be stockpiled on the private land for transportation during the remaining months of the year. Transportation consists of two truck/train units hauling two loads each per day,

six days a week. The mining operation would operate on a small-scale basis (1,000 tons per year) for the first three to four years. The crushing unit would not be located on site during that period of time and the company would haul bulk gypsum without crushing it on site.

Currently, H.E. Davis & Sons also has an approved operating plan and gypsum mine on the National Forest approximately 5 miles to the south on their Henry 1 & 2 claims in Section 19, T. 15 S., R. 1 E, SLM which may be mined for two more years.

C. PURPOSE AND NEED

The purpose of the proposed actions is to approve mining of gypsum from the claims for sale of the product at a profit. The gypsum will be mainly used for dry wall and fertilizer. The claim holder has the right to develop the mineral resource, specifically gypsum, by the United States mining laws (30 U.S.C. 21-54); however, the operations shall be conducted so as to minimize adverse impacts on the National Forest System surface resources according to 36 CFR part 228 subpart A and consistent with the Land and Resource Management Plan, Manti-La Sal National Forest, 1986.

Forest Plan Objectives

The Manti-La Sal National Forest management goals for mineral resources as stated in the Land and Resource Management plan (p. III-4) are:

1) Provide appropriate opportunities for and manage activities related to development and production of mineral resources.

2) Ensure that adequate reclamation of disturbed areas is accomplished.

The objectives or desired future conditions of the Forest are (p. III-12):

1) Areas not withdrawn from locatable mineral location would be open and available for development of mining claims.

2) Surface disturbing mining claim exploration and development activities would be evaluated and approved subject to site-specific environmental analysis.

The Forest Wide Direction is to minimize, or as appropriate, prevent adverse impacts on surface resources (p. III-35).

The project area does not lie within an Inventoried Roadless Area, or unroaded area of 1000 acres or more adjacent to an Inventoried Roadless Area.

Most of the operation, including the crushing and hauling portion, would be located on private land owned by the operator. About one third of the upper end of the pit would occur on National Forest System Land. This portion of the quarry (approximately 2 acres) is designated as part of a General Winter Range Management Unit of the Forest Plan. Management direction here is to "modify, delay, or deny surface occupancy, where applicable, if it causes unacceptable stress on big game or unmitigated environmental impacts", Forest Plan page III-62. References to denying surface occupancy are intended only for certain leaseable mineral activities.

Denying surface occupancy is not an option for locatable mining operations, as this proposal is covered under 36 CFR 228.5.

D. DECISION TO BE MADE BY RESPONSIBLE OFFICIALS

The decision to be made by the Forest Supervisor is to approve the Plan of Operations as submitted or to approve a modification of the Plan of Operations that would minimize adverse environmental impacts in accordance with Federal Regulations 36 CFR 228, Subpart A. In addition, the responsible official must determine how much bond is required to ensure reclamation consistent with the approved plan of Operations. The Forest Service will collect and administer the reclamation bond. The Forest Service will also conduct any wildlife monitoring deemed necessary.

E. PUBLIC SCOPING

Internal scoping for this project included review by various Forest Service resource specialists (11-19-97, 12-15-97 and 1-15-98). External scoping consisted of a legal notice in The Pyramid newspaper located in Mount Pleasant, Utah (August 27, 1997), The Times newspaper located in Nephi, Utah (August 27, 1997), listing in the Forest's *Schedule of Proposed Actions (September 1997)*, and by letter to several interested parties (State of Utah Div. of Wildlife Resources and Juab County Commissioners). Those individuals to whom letters were mailed included: Federal, State, and local governmental or land management entities; environmental and interest groups or businesses; adjacent landowners; range permittees; and others known to be potentially interested or affected. A 14-day comment period was allowed for responses. Project status has been continuously listed in the Quarterly List of Proposed Actions.

Field reviews were conducted with several interested groups. Robert Garrett of the Juab County Road Department reviewed the proposal (11-7-97) concerning the trackway and state road approach. He had no concerns. John Fairchild of the DWR was on site 11-7-97 and provided written comments in a letter to the FS dated 11-27-97 regarding mining effects to winter range for deer. Lawrence Brough, who is president of the Levan Land Company, reviewed the project. Levan Land Company owns private land affected by the proposal. Levan Land Company, comprised of 24 members, runs cattle on the respective Forest Service grazing allotment. H.E. Davis and Co. has contacted the Levan Land Company to negotiate a ROW for their access to the quarry effects. Stan Andersen, Sanpete Ranger District, consulted with John Muck of the USFWS concerning potential impacts to golden eagles, (refer to Appendix E).

Issues that were developed and formulated from these responses from the public and the IDT specialists's responses were: soil erosion from the access road, loss of winter range for mule deer, disturbance to nesting golden eagles by mining activities, air quality, safety concerns, threatened and endangered species, noxious weeds, cultural resources, recreation, and visual effects.

F. ISSUES

Issues are derived from review of the proposed action that was developed in response to the identified purpose and need. From public comments received and internal scoping conducted three issues were identified. These issues are the basis for the project analysis, project design features (or mitigation), alternatives, and overall disclosure of information in this document and supporting project record. Issues are categorized into: Identified Issues (issues evaluated in the document), and Issues Resolved Through Mitigation or Design.

General or supportive comments and comments outside the scope of this project analysis are dismissed from further consideration in this document.

IDENTIFIED ISSUES

The following are issues that were identified during the scoping process:

1) Soil Erosion From The Disturbed Area/Access Trackway Could Affect Water Quality in Chicken Creek
2) Loss of Winter Range for Mule Deer
3) Disturbance to Nesting Golden Eagles By Mining Activities
4) Potential Impacts to Visual Quality

1) Soil Erosion From The Disturbed Area/Access Trackway) Could Affect Water Quality in Chicken Creek

Evaluation Criteria: (1) sediment release to Chicken Creek and (2) potential affect to aquatic wildlife.

The operator flagged a desired alignment to access the quarry with a D8 dozer, a track mounted drill and a four-wheel drive pickup. In considering the proposal, several concerns were identified, including (a) steep slopes, (b) highly erosive soils, and (c) appropriate road design.

The slopes over which the access is planned are steep (70 percent) and erosive. Construction would be difficult due to full bench template and resource protection would need to be considered.

2) Loss of Winter Range for Mule Deer

Evaluation Criteria: (1) area potentially avoided by wintering deer and (2) percent of winter range affected.

This could result from (a) the bench area above the quarry being eliminated, (b) noise and disturbance displacing the deer, and (c) acres of winter range being lost. Development of the gypsum quarry would displace

deer that currently use the bench area for their center of activities. Disturbances from the blasting and operation of heavy equipment may disrupt their normal activities.

3) Disturbance to Nesting Golden Eagles By Mining Activities

Evaluation Criteria: (1) number of occupied nests and (2) acres of habitat affected.

Golden Eagle nesting sites are known to occur on cliffs of the canyon slopes within the vicinity of the quarry. The sensitive period for golden eagle nesting runs from February 1 – July 15.

4) **Potential Impact to Visual Quality**

Evaluation Criteria: whether or not the Forest Direction Visual Quality Objectives are met.

The present landscape, as seen from Forest Service Road #0101 up Chicken Creek, exhibits a very noticeable level of modification in the form of roads and mining activity with associated cut/fill scars. The mining operation would change the visual quality of the area as viewed from Chicken Creek Canyon. The Forest Plan, as amended, (Page III-62) states:

Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.

ISSUES THAT WOULD BE RESOLVED THROUGH MITIGATION AND DESIGN

Potential Impacts To Safety

Mining activities, blasting and hauling along the associated county road may affect the safety of other forest users traveling the same roads. Project requirements reduce safety hazards. The operator must comply with the terms and conditions of the plan of operations to operate on any county or forest development roads, including any provisions for traffic safety, as well as, Mine Safety and Health Administration requirements (MSHA) for mining and blasting (ref.: Appendix B stipulations).

Potential Impacts To Noxious Weeds

The project activities may increase the risk of noxious weed establishment through vehicular traffic and ground disturbance in the area. There are measures in the plan of operations that require the company to use weed free certified seed and hay for reclamation and to properly treat any areas with noxious weeds (ref.: Appendix B Reclamation Plan stipulations).

Potential Impacts to Cultural Resources

The Forest Service has been communicating with the Navajo Nation between December of 1997 and January of 2000. A cultural survey was conducted in the Fall of 1997 by District Archeologist Barbara Blackshear with a report of "no effect on NFS Lands" being determined.

Potential Impacts to Recreation

Impacts were considered upon campers, hikers, hunters, fisherman, and the public who may happen to drive through the affected area. Since mining will be conducted in the winter, little effect will be felt by any of these recreational pastimes. The Chicken Creek campground is seldom used in winter and is located several miles from the quarry. In fact, the Forest Service seriously considered decommissioning the campground because of its very low usage. Likewise fishermen are rarely if ever seen on Chicken Creek in the summer, let alone the winter season. The area surrounding the creek consists largely of thick brushy foliage, acting as a deterrent to foot travel. Two fishing ponds lie further beyond the creek and are not near the quarry. There is little hunting done in the area and it is likely that the company personnel themselves will be hunting during the season. The mining itself will be sporadic; it is estimated that 75% of the time the mine will be vacant in the winter. Shotblasting is usually infrequent and intermittent, normally being conducted in the early spring (March or April). It is for these reasons that recreational disturbances are determined to be of small consequence.

Potential Impacts To Air Quality

Air quality may be degraded by construction, mining and blasting activities. The proposed project is within Juab County. This county is currently within the prescribed attainment levels of PM10 as determined by the National Ambient Air Quality Standards (NAAQS). PM10 is a pollutant, which can be caused by dust, smoke, and fuel combustion.

Air quality in the vicinity of the project is generally good and meets NAAQS standards because of the project elevations (5,500 feet to 6,500 feet) along the Wasatch Plateau combined with topography, rural setting, and prevailing westerly winds.

The project would be within the required parameters of the State of Utah's air quality levels for such programs and standard stipulations for dust abatement would be incorporated. The company has consulted with the State of Utah Dept. of Environmental Quality, Air Quality Division and has met the required standards and thresholds for non-permitting purposes. If at any time the project exceeds air quality thresholds, then the company is required to submit the necessary state permits. Forest Plan direction requires compliance with State and Federal Air Quality Levels.

The Forest Plan, as amended (page II-56) states that "the role for the FS is to coordinate efforts with state and federal agency air quality control efforts" and "to meet State and Federal air quality objectives" (page III-43).

CHAPTER 2

DESCRIPTION OF ALTERNATIVES

A. INTRODUCTION

This chapter presents the alternatives considered for implementation, features common to action alternatives, alternatives considered but not further analyzed, and a comparative summary table of the alternatives considered for implementation responding to the identified issues.

B. THE FOLLOWING ALTERNATIVES WERE EVALUATED IN DETAIL

TABLE 2-1: LIST OF ALTERNATIVES

Alternative A - No Action. Non-approval of Plan of Operations **Alternative B - Approval of Plan of Operations as submitted by the operator**

ALTERNATIVE A - No Action - This alternative would be non-approval of the plan of operations and subsequently no mining. This is probably not a legal alternative as the claim holder has a right under the 1872 mining law to develop this locatable mineral resource (30 USC 21-54) but, by law, is displayed for comparison to the action alternative.

ALTERNATIVE B - Approve the Plan of Operations as submitted by the Operator. A copy of the submitted Plan of Operations is included in Appendix B.

Comparison of Alternatives - Under Alternative B, the operator has incorporated mitigation measures he feels are needed to address environmental concerns. Such measures include: storing gypsum tailings on private ground, sloping of surfaces to allow natural drainage, storage of blasting powder in MSHA approved powder magazines, containment berms for fuel tanks, proper storage and handling of stripped topsoil, and reclaiming and reseeding of exposed surfaces upon mine closure. Also, there should seldom be fugitive dust emanating from road activity or the crushing process since winter moisture and snowfall will suppress dust emissions; however, if water is needed there will be water trucks and spray equipment available.

C. ALTERNATIVES CONSIDERED BUT NOT FURTHER ANALYZED

An alternate access route to the mining claims was proposed and reviewed in the Summer/Fall of 1997. This route traversed westward the length of the ridge off of the Chicken Creek Road (FSR 0101) from above the

claims. This route would have greatly increased the length of access road and the amount of disturbance. This would have increased the possibility of disturbing more golden eagle nests in the adjacent Pigeon Canyon, as well as, affecting more wintering habitat for mule deer. Another access route was considered and located approximately 200 feet to the west of the current mine disturbance, but this route proved to be too steep (> 30%), traversed directly across the outcrop, and was considered not feasible nor safe.

The trackway currently in the Plan of Operations was considered by the Forest Service and operator and adopted by the operator. Negotiations between the Forest Service and operator were conducted successfully and the operator agreed to alter his original Plan of Operation to include sediment control, monitoring of wildlife, timing restrictions if determined necessary based upon monitoring, and reclamation. There was no need to evaluate a third alternative (Alternative C) that would include additional mitigations.

D. COMPARISON OF ALTERNATIVES

Table 2-2 compares the alternatives by major components of the Plan of Operations, compliance with the mining laws, surface disturbance, and the issues.

TABLE 2-2: COMPARISON SUMMARY OF ALTERNATIVES

Components of the Alternatives	Alternative A	Alternative B
Amount of Trackway (on forest system land).	0	1,000 feet
Percent of road grade (on forest system land).	0	15%
Total Disturbance	0	4.6 acres
Responsiveness to Purpose and Need	**Alternative A**	**Alternative B**
Complies with the 1872 Mining Law Economic Benefits	No None	Yes Operator would receive economic benefits of his operations. Benefits to surrounding communities would be low.
Issue: Soil Erosion of Disturbed Area/Access Trackway	**Alternative A**	**Alternative B**
Sediment release into Chicken Creek Potential affect to aquatic wildlife	No Change No Change	Negligible Negligible
Issue: Mining Effects to Mule Deer Habitat	**Alternative A**	**Alternative B**
Area potentially avoided by wintering deer	No Effect	500 acres

Percent of available winter range affected	No Effect	3%
Issue: Mining Effects to Golden Eagle Nesting	**Alternative A**	**Alternative B**
Occupied nests within ½ mile radius	2 historical nests. None found in 1998 survey. No Effect	May Impact. Eagles could be displaced to other nests in the territory. If monitoring reveals nesting eagles within 0.5 miles, timing restrictions would be imposed on the operations.
Acreage of habitat potentially affected	0	500 acres
Issue: Potential Impact to Visual Quality	**Alternative A**	**Alternative B**
Whether or not the Forest Direction Visual Quality Objectives are met	Yes	Yes, within the ten-year period

No Effect – There would be no change to existing trends/conditions caused by the alternative.

High Effect – The evaluated project could cause a noticeable/measurable change to the discussed issue/resource category sufficient to be a concern and change existing trends (not significant as defined under NEPA).

Moderate Effect – The evaluated project could cause a noticeable/measurable change to the discussed issue/resource category sufficient to be a concern but would not change existing trends.

Low Effect – The proposed project could cause a noticeable/measurable change to the discussed issue/category but not sufficient to cause concern or change existing trends.

Negligible Effect – Any change caused by the evaluated project would be noticeable or measurable relative to existing conditions/trends.

CHAPTER 3
AFFECTED ENVIRONMENT

A. INTRODUCTION

This chapter summarizes the resources of the affected area, with emphasis on the issue topics.

This analysis tiers to the Manti-La Sal National Forest Land and Resource Management Plan (Forest Plan) and incorporates by reference the analysis disclosed in its Final Environmental Impact Statement and Record of Decision, 1986, as amended. Relevant Forest-wide and management area goals, direction, and standards from the Forest Plan are incorporated in this analysis and are further discussed in this chapter.

The proposed quarry is located in the San Pitch Mountains just east of Levan, Utah. The town of Levan is a small rural community with a population of 416 people. The Manti-La Sal NF Land and Resource Management Plan (Forest Plan) emphasis for this area is General Big Game Winter Range (GWR) page III-61. These are areas that big game traditionally use during the winter. Other uses may occur so long as it does not conflict or cause unacceptable stress on wildlife and the activities or rehabilitation of the activities emphasizes habitat maintenance or enhancement.

The Canyon has a graveled road (Forest Service Road #0101) that is maintained by Juab County and is kept in good condition year-round. The proposed quarry is located on a steep south-facing slope overlooking the county road. The project site is sparsely vegetated with gamble oak, bitterbrush and mountain mahogany shrub interspersed with some mature juniper and bunchgrass.

The proposed quarry is well outside of inventoried roadless areas and is north of a county maintained road, Chicken Creek Road (FSR #0101), which bisects the unroaded lands on both sides (north and south).

B. AFFECTED ENVIRONMENT

General Setting (Geology, Soils, Vegetation)

The San Pitch Division covers the northern part of the Gunnison Plateau, also called the San Pitch Mountains. The maximum elevation of the San Pitch Mountains is 9,994 feet. This north trending ranges averages 8-12 miles in width in which only the northern part of approximately 30 miles is on the National Forest System Lands. This area consists of rugged foothills and mountains and a steep western plateau with a steep western escarpment. From the eastern margin of the central plateau, the terrain drops abruptly to form the eastern front of the range. The narrow northern end of the San Pitch Mountains is a continuation of the western escarpment.

Sedimentary strata exposed in the San Pitch Mountains range from Jurassic to Tertiary in age. Shale, sandstone and limestone predominate, along with conglomerate, gypsum and siltstone. This mountain range lies in the Utah Thrust Belt, which is structurally complex. Normal faults bound the eastern and western fronts. The

Levan anticline is on the west end of the San Pitch Mountains. The complex folding and faulting of the San Pitch Mountains is probably from a combination of thrust faulting and the collapse of salt diapers. The gypsum deposits are formed from hydrothermal replacement deposits due to such deformational processes along the thrust belt.

The proposed gypsum quarry is on a steep (70+%) south-facing slope. The gypsum deposit is exposed as a rock outcrop, and is surrounded by weakly developed, droughty soils formed from the surrounding shale and colluvium. Most of the soils are shallow and have rapid runoff. Topsoil is very thin to non-existent in this area.

Much of the area is bare or sparsely vegetated. Reclamation activity would not be expected to introduce any more vegetation than what currently exists naturally.

Wildlife

A 1997 report by the Utah Division of Wildlife Resources stated that, historically, there have been five known Golden Eagle nests along cliff faces in the vicinity of the mine project which probably represents one nesting pair (ref. DWR Pederson, 11-17-97). Two of these nests are within ½ mile of the proposed gypsum quarry. In reviewing these same five nesting sites in 1998, Stan Andersen of the USFS reported that no eagle nests were found in the four historical nest sites located south of Chicken Creek in sections 33 and 34. Likewise, no nest was discovered at the fifth historic nest site that was located across Pigeon Creek, less than a mile north of the proposed gypsum mine and separated from this mine by a steep ridge. As of 1998 a new sixth nest was located in the NE ¼ of section 34 approximately ½ mile northeast of the proposed gypsum mine, but it also lies over the ridge and bore no signs of nest tending (ref. S. Andersen, 3-25-98).

The mining claims are located within a mule deer winter range that encompasses an area of approximately 16,000 acres along the western flank of the San Pitch Mountains. Deer bed down on the 10 to 20 acre bench above the quarry and move onto the steeper slopes to feed. The site has a southern aspect and is relatively snow-free during the winter months. The winter range time extends from December 1 – April 15th. For wintering deer, the edges of timbered areas atop the ridge act as security to hide from activities and predators.

Stansbury cliffrose and birchleaf mahogany are present on the site and show evidence of moderate use by mule deer during the winter. The amount of foraging habitat at the site is, however low compared to better habitat to the east and west. Foraging on the mine site is probably done by deer in transition to one of these other areas (ref. S. Andersen, 12-1-97).

Some wildlife monitoring has been done on the Henry #1 and #2 gypsum mine located approximately 5 miles to the south of the Chicken Creek gypsum mine. Evidence of deer can be found on the mine site and adjacent hills, indicating that with time the deer become habituated to the mining activities. Conditions would likely be similar at the Chicken Creek Mine because the terrains are similar. Since operations are already occurring on the private lands at the H.E. Davis' #3 and #4 (Chicken Creek Mine), some avoidance and habituation by mule deer to the mining activities have likely occurred.

Wildlife and Fish Resource Management in the Forest Plan states on page III-62:

(01) Provide big game habitat needed to achieve the big-game population objectives identified in interagency herd unit plans.

a. Maintain at least 30% of shrub plants in mature age, and at least 10% in young age classes.

b. Maintain at least two shrub species on sites capable of growing two or more shrub species.

c. Maintain habitat capability at a level at least 50% of the potential for big game.

d. Activities or uses which induce human activities within the area may be modified, rescheduled, or denied if the combination of accumulated impacts on vegetation, behavior, and/or mitigation reduce effective habitat use below 80% of the base year 1980 capacity for this unit.

The Forest Plan, as amended, (Page III-62) also states:

(01) Modify, delay or deny mineral leasing, exploration, and/or surface occupancy, where applicable, if they cause unacceptable stress on big game or unmitigated damage to their habitat.

a. Prohibit activities during critical periods of big-game use.

b. Approved activities must be short termed and prompt reclamation must be assured.

The Chicken Creek quarry area is part of the Levan Land Livestock Company, which is authorized to graze a total of 92 head of cattle from the months of June 25 thru- August 25. Forest Plan direction on page III-62:

(01) Manage livestock grazing to compliment big-game habitat

a. Establish proper use criteria that should maintain or enhance habitat for wildlife. Limit livestock use to this level.

Threatened or Endangered Species

There are no listed Threatened or Endangered species of plants or animals affected by the proposal (USDA Forest Service, 1991a). There are no sensitive species affected by the proposal (ref., BE/BA, Appendix C).

Water Quality of Chicken Creek and Associated Aquatic Wildlife

Chicken Creek is a perennial stream that drains the west slope of the San Pitch Mountains, flowing into Chicken Creek Reservoir and then onward to the Sevier River. Currently the creek supports recreational and agricultural uses. The Utah Division of Water Quality (Utah Administration Code R317-2, page 22) numerically rates Chicken Creek as follows:

1. "2B" - Protected for secondary contact recreation such as boating, wading, or similar uses.

2. "3A" - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organism in their food chain.

3. "4" - Protected for agricultural uses including irrigation of crops and stock watering.

Visual Quality of Chicken Creek Canyon

The present landscape, as seen from Forest Service Road #0101 up Chicken Creek, exhibits a very noticeable level of modification in the form of roads and mining activity with associated cut/fill scars. The mining operation would change the visual quality of the area as viewed from Chicken Creek Canyon.

Sections of the operation are located within an area having the visual quality objective of partial retention, meaning that the result created by mining must appear visually subordinate to the naturally appearing landscape and appear as a natural occurrence. Using the visual quality map found in the Forest Plan, it appears that this middle ground view of partial retention is defined as the viewshed seen from the more populated area to the immediate west, including the town of Levan.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

This chapter identifies the projected impacts from implementing the alternatives considered in detail, presented in Chapter 2. This chapter discloses both the potential direct/indirect effects and cumulative impacts for Identified Issues. Direct/indirect effects are those effects that would likely occur during or shortly after implementation of a specific alternative. Direct/indirect effects are presented by resource topic corresponding to the issues identified in Chapter 2. Cumulative impacts are those effects, which may occur with implementation of an alternative combined with other past, present, or reasonably foreseeable actions.

TABLE 4-1: LIST OF ALTERNATIVES

Alternative A - No Action
Alternative B - Approval of Plan of Operation as Submitted by the Operator

B. DIRECT AND INDIRECT EFFECTS OF IMPLEMENTATION BY ALTERNATIVE

- *I. Concerns About Potential Impacts of Soil Erosion From The Disturbed Area/Trackway*
- *II. Concerns About Potential Impacts to Mule Deer from Loss of Winter Range*
- *III. Concerns About Potential Impacts to Nesting Golden Eagles By Mining Activities*
- *IV. Concerns about Visual Quality*

I. Concerns About Potential Impacts of Soil Erosion From the Disturbed Area/Trackway

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan

This alternative would be consistent with objectives for protection of resources but would not be consistent with the Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor with

FLPMA section 102(a)12 which states "that public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The road originally proposed by the operator would most likely fail given the highly erosive soils and steep slope of the project area (FS engineer's report of 12/9/97). There would be a high risk of the outslopes of the road failing since mine road berms are required by MSHA standards. Such failures would displace soil downhill with the potential to discharge into the stream and affect water quality and aquatics. Recontouring the disturbance during reclamation would be difficult since there would be little to no fill material available to recontour back to original slope. Increased sedimentation may endanger fish and other organisms, possibly affecting respiration, spawning, visual acuity, and degradation of macroinvertebrate habitat. The creek also supports recreational and agricultural uses.

If the proposed access is to be considered a road, it would have to meet Forest Service and MSHA standards. These standards require a 12-foot wide road with additional width for MSHA standard berm height. No more than an 18 percent grade could be allowed. If the proposed access is considered a trackway for equipment access, MSHA berm heights no longer apply and the grade can be increased. The access would be temporary during mining operations and would require heavy maintenance and special considerations for construction for resource protection.

Forest Service concerns regarding the originally proposed road resulted in a conference call with the Ranger District and the Manti-La Sal National Forest engineering staff. After careful consideration of the above concerns, the consensus was that a trackway would be the most environmentally acceptable solution to meet the operator's needs. It may not even be possible to construct a road in the location to meet MSHA standards because of the steep terrain. The length of road would be extensive with the road switch backing on it. A haul road is not needed because the gypsum ore would be pushed and moved by gravity to the crusher at the bottom of the slope and then transported on the County Road (FSR 0101); access up the slope is needed for mining equipment only. The trackway would be reclaimed following operations.

The trackway proposed in this alternative was adopted by the operator in the Plan of Operations /Reclamation Plan (map #2), virtually eliminating the concern regarding road failure and erosion of the highly erosive soils and steep slopes (30-70%) of the project area. Erosion and subsequent sedimentation would be contained within the project area while sediment catch basins would reduce sediment contributions to the adjacent undisturbed areas and Chicken Creek to negligible levels relative to existing conditions (ref., USFWS report, D.Okerlund, 1-21-98). Mitigation measures/ requirements require end-hauling of the fill material during the construction phase (rather than pushing over the outslope side). Drainage structures (rock check dams) would be constructed every 20 feet on the trackway and the end-hauled material would be stored at the quarry bottom on private land for later reclamation recontouring purposes. There would be sediment catch basins on the private land to catch and properly dissipate runoff. There would be no mine road berms to fail since a trackway does not have to meet the parameters of MSHA regulations. Recontouring the disturbance during reclamation would be less difficult since there would be fill material available to recontour back to original slope.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards and goals (page III-2).

II. Concerns About Potential Impacts to Loss of Winter Range for Mule Deer

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with management of big-game habitat but would not be consistent with the Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "that public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

Mining activities such as blasting, dozer work, and truck hauling could displace and disperse the mule deer from their winter habitat in the Chicken Creek Canyon area. Actual ground disturbance from the mining (4.6 acres) would eliminate part of a bench that the deer use to forage and bed down. This would last for the life of operations. In regard to disruption of foraging opportunities, the amount of foraging habitat on the mine site is nearly negligible since much better habitat exists east and west of the mine (ref. S. Andersen, 12-1-97).

Observations around the Henry #1 and #2 gypsum mine 5 miles south of Levan in the same type of terrain/vegetation indicate that this mining would not greatly affect the deer since normal winter patterns (snow) causes intermittent mining during the winter months that the deer can tolerate. The impacts to deer at Henry #1 & #2 Mine appear to be minimal since they have become accustomed to the mining operation (Andersen Report, 12-1-97).

It is expected that the impact upon deer would be even less at the Davis #3 and #4 (Chicken Creek) mine site because of the smaller area of disturbance and poorer quality of habitat. The area potentially avoided by wintering deer is estimated to be between 125 to 500 acres, or a maximum of 3 % of their winter range of 16,000 acres in the western flank of the San Pitch Mountains. This determination was based upon a range of a 0.25 to 0.50-mile radius from the mine site. It is expected that wintering animals would become accustomed to the activities and thus re-enter the area, as has occurred at the Henry #1 and #2 Mine. Since the Chicken Creek

Mine is already operating on the private lands, some of the anticipated effects and habituation by wintering animals may have already occurred.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards.

III. Concerns About Potential Impacts to Disturbance of Nesting Golden Eagles By Mining Action

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with management of habitat but would not be consistent with Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The timing of the mining activities as proposed by the operator from October through the winter season could directly effect use by the eagles. The sensitive period for golden eagle nesting runs from February 1 - July 15. The area potentially avoided by nesting Golden Eagles, considering a radius of avoidance of 0.5 miles, would be 500 acres. Any nesting pair would most likely select nesting sites outside of this area.

Golden Eagles are not listed as Endangered, Threatened, or Sensitive species; however, they are protected under the Eagle Act (16 USC 668). The Reclamation Plan includes Forest Service monitoring of the eagles to determine if a pair of eagles occupies a nearby nest. The DWR and USFWS would then be notified and consulted on a course of action. If a nesting pair were found within the 0.5 mile radius, a timing stipulation would be implemented to limit mining activities from February 1- July 15 to ensure that the golden eagles can nest and successfully rear their young. This would comply with the Eagle Act (16 USC 668).

A biological analysis determined that other wildlife species will not be substantially affected by the alternatives (refer to the Biological Assessment and Biological Evaluation for a more thorough discussion.)

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards.

IV. Potential Impact to Visual Quality

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with the Forest Plan's management of visual resources (page III-2) but would not be consistent with Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The operation is located within an area having the visual quality of partial retention. Neither the quarry nor the trackway are within view of any populated area including the town of Levan. The quarry access would be partially screened by vegetation found adjacent to Forest Service Road #0101 as one travels up or down the canyon. Long duration terminal or line-of-sight views would be limited. Visitor use in this area is primarily drive through. Designated foreground views begin further up the canyon road where it nears the Forest Boundary, well to the east of the quarry. The Forest Plan, as amended, (Page III-62) states:

(01) Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.

The VQO would be met within 10 years of permitting by proper reclamation of the disturbance on National Forest System Lands, after the ore body is exhausted. Mining rights as prescribed under the 1872 Mining Law could take precedence if the mineable gypsum ore extraction exceeds ten years. Reclamation measures would help ensure that VQOs are met.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with the Forest Plan's management of mineral resources (page III-4) and FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

C. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitments are permanent and cannot be reversed once operations commence or decisions allowing such operations to commence are implemented. Since gypsum deposits are not renewable within a reasonable time span, removal and consumption of such minerals is an irreversible commitment of this

resource. Other sources such as fuels and electricity used to produce gypsum ore bodies would also be irreversibly committed.

Since soils would take many years to replace under natural conditions, the loss of soils at the mine through erosion can be considered an irreversible commitment. Topsoil can be replaced in small areas to provide a suitable growth medium for vegetation. Vegetation can be reestablished on sites within a reasonable period of time and is not considered irreversible.

Irretrievable commitments are those resources, which are lost for some period of time and can be replaced. For example, vegetation removed from the site cannot be put back on the site in its original state, so the loss is irretrievable. Vegetation is a renewable resource and can be re-established on the site in a similar pattern within a reasonable period of time (human lifetime).

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES FOR EACH ALTERNATIVE COULD BE AS FOLLOWS:

Alternative A

No effect.

Alternative B

Gypsum ore produced and the resources consumed by the mining project would be irreversibly committed and not available for use by future generations.

The losses of vegetation and effects to other resources such as wildlife (deer populations) and visuals would be minimal until the mining activities cease and the site is reclaimed and vegetation is replaced. Gypsum mining could last for 5-20 years at this site.

Any sedimentation which is not properly or adequately remedied could result in an irretrievable loss of water quality, aquatic wildlife, and vegetation. The probability of sediment or contaminants being introduced into Chicken Creek would be decreased to a minimal level due to the sediment control measures, recontouring the mining disturbance, mitigation measures, Spill Prevention Control and Countermeasure Plan, timing measures, and project design features.

D. CUMULATIVE EFFECTS

Cumulative effects are discussed for this proposal with the assumption that the Plan of Operations would be approved under the terms of the mining laws. Cumulative effects are discussed with respect to the drainage of

Chicken Creek, where the quarry is located and also from a much broader perspective of the San Pitch Mountain Range.

This section discusses the cumulative effects. Past, present, and reasonably foreseeable future activities in the areas for the next 20 years are displayed on Tables 4-2 through 4-4.

Chicken Creek Watershed

There is currently an active gypsum mine in the canyon just ½ mile below (west) and across the canyon (south) from the proposed site. Geneva Rock of Orem, Utah (formerly Gunnison Gypsum Corp. of Spokane, Washington) operates this mine. This operation is approximately 7 acres in size, partially on private land and partially on the National Forest System Land.

There are also at least two other potential quarry sites in the canyon below the proposed extension of the Chicken Creek site where some past gypsum mining has occurred. With the current demand for gypsum, it is anticipated that all of these gypsum ore outcrops would eventually be mined. If so, then it may be anticipated that there would be some cumulative effects as these mining operations have the potential to increase to an estimated total of 25 to 30 acres. This would depend on future circumstances and demand for gypsum.

San Pitch Division

This seam of gypsum runs through the foothills the entire length of the San Pitch Division on the west side of the mountain range from the town of Nephi to ten miles south of the town of Levan. There are currently three operating gypsum mines in the San Pitch Mountains with the potential to develop 8-10 more gypsum mines on the entire mountain range (including the three mentioned in Chicken Creek Canyon).

The existing mine in Salt Creek Canyon by State Highway 89 is entirely on private land. The other two mines, one in Chicken Creek and one about five miles south of Levan are partially located on National Forest System Lands. Potential cumulative effects involved with expansion of mining would be expected to have a negative effect to visuals and big game winter range if further mitigation were not imposed in the future.

I. Concerns About Potential Impacts of Soil Erosion From The Disturbed Area/Trackway

The potential release of sediment into Chicken Creek by another future mining operation may affect water quality. As with H.E. Davis' proposal and in accordance with Forest Service Best Management Practices, future mine operations would be required to use adequate drainage, waterbars, and sediment catch basins in order for each mine to have negligible effects to water quality and to downstream life. Then the cumulative effects from all four mines should still be negligible; especially in comparison to more serious impacts resulting from natural processes such as large storms, with their accompanying flooding and erosion.

II. Concerns About Potential Impacts to Mule Deer from Loss of Winter Range

The concerns for loss of deer winter range would increase as mining activity increased in the area. The mining in the canyon has currently removed approximately 7 acres of winter range habitat and with the advent of

expanding this quarry would remove approximately 5 more acres of habitat. If other mines are developed, there is potential to remove an estimated 25 to 30 acres in the canyon. These numbers in themselves are not significant, representing 0.2 % of the designated General Big Game Winter Range of approximately 16,000 acres on the west flank of the San Pitch Mountains. We know that disruption of winter range habitat is a function of the intensity of human activity (e.g., noise) during the mining process (Lyon, J.L. 1979). The worst-case scenario would be expected if all four potential areas in the canyon were operating in the winter at the same time. Using the 0.25 to 0.50-mile radius determination from any one mine site, the percent of available winter range affected could vary from 3 to 12 %. This is not the case right now, nor would it be expected that all four mines would operate at the same time (if three mines were in operation concurrently, the percent of winter range potentially affected would be 2 to 9%). Monitoring now and in the future would determine whether further mitigations are warranted.

III. Concerns About Potential Impacts to Nesting Golden Eagles By Mining Activities

The concerns for decrease in eagle nesting is similar to the concerns about impacts to mule deer. Again, eagles could be displaced to other nests, away from the 3 to 12% of area that might be affected by four mines operating simultaneously for any extended period of time. Consequently, monitoring of eagle nesting by the Forest Service would be required as deemed appropriate. Required reclamation and revegetation of disturbance on NFS lands will reduce effects to wildlife habitat.

IV. Concerns about Visual Quality

Disturbance from mining could become more obtrusive as mining operations increase. The visual quality objective for this area is partial retention, meaning that the result created by mining must appear visually subordinate to the naturally appearing landscape and appear as a natural occurrence. Some of the disturbance can be mitigated for visual compliance during and after mining operations; however, light soil colors from the mining activity would contrast with sparse, dark colored pinyon pine and juniper vegetation in the area. The more mining that occurs, the more difficult it would be to meet visual quality objectives currently or into the future.

These mines (Geneva Rock Mine and the H.E. Davis Mine on private) were overlooked during the Forest Land Management Planning Process of 1986. The visual quality objective should have been made compatible with other mineral management areas, which is modification. Modification means that the result created by the activity may visually dominate the natural characteristics of the surrounding view shed, but must appear as a natural occurrence. At present, the mining activity meets the objective of partial retention, but if mining operations continue to develop in the future, as described above, conditions would dictate that the visual quality objective as modification would become a cumulative effect.

CUMULATIVE EFFECTS COULD BE AS FOLLOWS:

Alternative A

No effect.

Alternative B

The gypsum operation would be approved and implemented as proposed. The general winter range around the mine and associated deer herds would be slightly affected, as well as possibly golden eagle nesting. Consequently there will be yearly monitoring of eagle nesting by the Forest Service which may require timing limitations for mine use. Required reclamation and revegetation of disturbance on NFS lands will reduce effects to wildlife habitat (e.g., for deer). Past and present gypsum mining within the surrounding area has and could remove minimal amounts of water and disturb relatively small amounts of vegetation and wildlife habitat. In the past, impacts to sensitive species have been insignificant.

Under the proposal by H.E. Davis, a trackway would be developed. Measures require that access by trackway contain adequate drainage and catchment structures. Concerns about sedimentation into Chicken Creek and thus water quality would be minimized by placement of a drainage control system (waterbars and sediment catch basins) with little or no effects to downstream aquatic life. Natural processes could affect water quality, erosion and sedimentation.

Road access to all sites would remain under current or better conditions. Stipulations require that temporary roads be effectively reclaimed, thereby reducing potential access effects.

Main road access into the site along Chicken Creek would increase in traffic, which could affect the safety (although minimal) of the general public along the roadways. The proposed Reclamation Plan contain stipulations require proper signing and adherence to all traffic and roadway travel rules.

Range management and resources would be coordinated with the current and future other resource activities to minimize conflicts and ensure effective land management. Any losses of forage or livestock would be offset or compensated for.

Over a longer time frame scenario, success could mean additional gypsum mining in the area in the near or immediate future. Air quality and disturbance would be affected as a function of the number of mines and/ or activities to be added. Visual Quality Objectives would be met by using Forest Plan standards and guidelines and BMPs for exploration, development, and production.
The possibility exists that future activities could have a degree of risk for hazardous materials spills directly or indirectly affecting the soil, water, plant, and fisheries resources. Proactive and response measures are developed and implemented in a Spill Prevention Containment and Countermeasure Plan (SPCC). A SPCC is required for this project.

The current proposed mine would not make a significant positive nor negative economic impact on the surrounding communities. Long-term development of the area could slightly increase the income of local communities, i.e. Levan and Nephi through supplies of resources, lodging, food and employment of 1-5 people.

TABLE 4-2: SUMMARY OF PAST ACTIONS

ACTION	DATE	RESIDUAL EFFECTS
WATERSHED Chicken Creek restoration- reroute of stream, placement of rip-rap, graveling of road.	1983-84	Increase in water quality and decrease in sedimentation of Chicken Creek after large flood event. Stream bank stabilization.
RANGE Levan Land Livestock Co. C&H Allotment -- with 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions. Actual mine site on NFS lands is unsuitable for grazing.
RECREATION Deer and Elk Hunting, Dispersed Recreation, and fishing along Chicken Creek upstream above the site. Use is moderate during the summer at Chicken Creek Campground, hunting seasons, and less during the wintertime.	Hunting seasons in later summer and fall. Dispersed recreation year round, with greatest activity during hunting seasons.	Human activity in winter consists of snowmobiles, x-country skiing. Most activity in summer season with peaks during hunting seasons. Human activity disperses wildlife. User created roads, Forest Development Roads, and dispersed camping sites are low in vegetation production. Some erosion and sediment production from already disturbed areas.
CULTURAL RESOURCES	Various activities, projects	All proposed projects with ground disturbance " undertakings" require survey, evaluation and protection
MINERALS Pre-H.E. Davis proposal gypsum mine on private land. Robert Steele and then Gunnison Gypsum conducted gypsum mining on Security #1-4 mining claims, which is down and across the canyon from current proposal.	1950s-1980s 1980's to present	Site was previously worked as gypsum mine on the private land. Site is naturally low in vegetation. Some erosion and sediment production from already disturbed areas.
TIMBER None		Site is unsuitable

TABLE 4-3: SUMMARY OF PRESENT ACTIONS

ACTION	DATE	RESIDUAL EFFECTS
WATERSHED none		
RANGE Levan Land Livestock Co. C&H Allotment – with more than 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions.
RECREATION Deer and Elk Hunting, Dispersed Recreation, and fishing along Chicken Creek upstream of he site and is used moderately during the summer and hunting seasons, and during wintertime.	Hunting seasons in later summer and fall. Dispersed recreation year round, with greatest activity during hunting seasons.	Human activity in winter consists of snowmobiles, x-country skiing. Most activity in summer season with peaks during hunting seasons. Human activity disperses wildlife. User created roads, Forest Development Roads, and heavily dispersed camping sites are low in vegetation production. Some erosion and sediment production from disturbed areas.
CULTURAL RESOURCES	Various activities, projects	All proposed projects with ground disturbance " undertakings" require survey, evaluation and protection
MINERALS Geneva Rock (formerly Steel and also Gunnison) mining gypsum down and across the canyon from the current proposal.	Geneva bought out project, adopted operating plan and started mining in May 2000.	Disturbance associated with mine construction and drilling, traffic, noise, sedimentation on steep lengthy roads. Some reclamation on going, revegetation, sediment/spill control berms on roads and loadout site.
TIMBER None		Unsuitable for timber

TABLE 4-4: SUMMARY OF REASONABLY FORESEEABLE ACTIONS

ACTION	DATES	FORESEEABLE EFFECTS
WATERSHED unknown		
RANGE Levan Land Livestock Co. C&H Allotment – with 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions will continue. Actual mine site on NFS lands is unsuitable for grazing.

RECREATION Deer and Elk Hunting, Dispersed Recreation and fishing along Chicken Creek. Area will be used heavily during the summer and hunting seasons, less during wintertime.	Hunting seasons in later summer and fall. Dispersed recreation year round, with greatest activity during hunting seasons.	Human activity in winter consists of snowmobiles, x-country skiing. Most activity in summer season with peaks during hunting seasons. Human activity disperses wildlife. User created roads, Forest Development Roads, and dispersed camping sites are low in vegetation production. Some erosion and sediment production from disturbed areas.
CULTURAL RESOURCES	Various activities, projects	All proposed projects with ground disturbance " undertakings" require survey, evaluation and protection
MINERALS Possibility of additional gypsum mines in canyon for total of 5 mines.	Possibly within 10-20 years	Increased sedimentation, decrease in water and air quality, deer and eagle habitat; increase in traffic and concerns for public safety.
TIMBER None		

CHAPTER 5

PUBLIC INVOLVEMENT AND AGENCY PARTICIPATION

The San Pete Ranger District has involved or at least solicited comments from members of the public, interested private groups and State of Utah and federal agencies by doing the following:

1. This mining proposal was listed on the NEPA quarterly list of projects published by Manti-La Sal National Forest beginning in September of 1997.
2. A Project Scoping Document was prepared on August 22,1997 and the ID Team and the operator reviewed the proposal on November 19, 1997.
3. Legal notices request for public input were published in the Times News in Nephi, Utah and the Pyramid in Mt. Pleasant, Utah.
4. A written request for input was made to the State of Utah Division of Wildlife Resources. An on-the-ground review of the proposal was made with John Fairchild from the DWR on November 7, 1997. The DWR responded by letter dated November 27, 1997.
5. A written request for input was made to the Juab County Commissioners. An on-the-ground review of the approach to the county road was made on November 7, 1997 with Robert Garrett from the Juab County Road Dept.
6. Ranger Shore reviewed the proposal with Lawrence Brough who is President of Levan Land Company. Levan Land Company owns private land affected by the proposal. Levan Land Company, comprised of 24 members, runs cattle on the respective Forest Service grazing allotment. H.E. Davis and Co. has contacted the Levan Land Company to negotiate a ROW for their access to the quarry.
7. On December 15, 1997 Stan Andersen, San Pete Ranger District, spoke with Jim Muck from the US Fish and Wildlife Service about the proposed gypsum mine and potential impacts to golden eagles.
8. On January 12, 1998, Ranger Shore reviewed the entire proposed operating plan with Tom Munsen from the Utah State Division of Oil Gas and Mining. Mr. Munsen was comfortable with the Forest Service handling of the operating plan as long as he was kept informed of the status, furnished a copy of the EA and reclamation plan. He stated he would visit the mine when operations were started.
9. On January 15, 1998 the IDT team met with the operator at the San Pete Ranger District Office. We discussed the results of the analysis to date, the issues that had surfaced, necessary mitigation and the need for a reclamation plan and a bond.

Other than the above, there were no other comments received from the public scoping.

The following people were members of the interdisciplinary team:

Specialist	Role	Agency
Dale Harber	Minerals/Geology	USFS
Barbara Blackshear	Cultural Resources	USFS
Stan Andersen	Biology/ Wildlife	USFS
Kevin Draper	Landscape Architect	USFS
Tom Shore	Range Management	USFS
Martha Defreest	Engineer	USFS
Consultant	**Role**	**Agency**
Dan Larsen	Soils	USFS
Jill Defour	Fisheries	USFS
Bob Thompson	T&E Species /Reclamation/ Botany	USFS
Don Okerlund	Hydrology	USFS

ENVIRONMENTAL ASSESSMENT

DAVIS 3 & 4 MINING CLAIMS

CHICKEN CREEK GYPSUM MINE

PLAN OF OPERATIONS

INTERMOUNTAIN REGION

MANTI-LA SAL NATIONAL FOREST

SAN PETE RANGER DISTRICT

Revised November 2001

JUAB COUNTY, UTAH

Responsible Agency:

USDA Forest Service
Manti-La Sal National Forest
Price, Utah 84501

Responsible Official:

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CHAPTER 1

PURPOSE AND NEED

A. INTRODUCTION

This chapter presents the project proposal, the purpose and need for the proposal, the decisions to be made, public involvement efforts (scoping), and the resulting issue identification.

H.E. Davis and Sons, Inc. of Spanish Fork, Utah submitted a Plan of Operations to extend his gypsum mining operations on his Davis 3 & 4 claims (Chicken Creek Mine) onto National Forest System lands. The Chicken Creek Mine and proposed extension are located within the San Pitch Division of the Uinta National Forest administered by the Sanpete Ranger District. The Claims are located on the north slope of Chicken Creek Canyon in Section 34, T.14 S., R. 1 E., SLM, in Juab County (refer to location maps, Appendix A). Estimated total disturbed area, including the private land, would be approximately 4.6 acres.

B. PROPOSED ACTION

The Manti-La Sal National Forest proposes to approve the plan of operations with mitigations/conditions to minimize adverse affects to environmental resources.

Limited operations at the Chicken Creek Mine are currently underway on H.E. Davis and Son's 32-acre parcel of private land in Chicken Creek between the county road and their claims that lie on National Forest System lands. The crushing operation, ore stockpile, and waste rock pile would be located on the private land adjacent to the road in the bottom of the canyon. The proposal would extend the existing quarry northward onto National Forest. The company plans to construct a trackway (rather than a road, which would need to be constructed to Forest Service and MSHA standards) for equipment access to the top portion of the claims for the purpose of drilling ore samples and to facilitate the ongoing operation. The trackway would come in from the east across private land owned by Levan Land and Livestock Company. H.E. Davis has made arrangements for an easement for this portion of the access route. A section of the trackway on the National Forest System lands would eventually be part of the area excavated by the pit. The remainder of the trackway would be rehabilitated and abandoned following operations according to the Plan of Operation submitted by the operator. The company would operate annually from October to April for an estimated period of 10 years.

About 150 shot holes, 14 feet deep, could be drilled and blasted on a weekly basis. The blasted material would then be pushed down the hill off National Forest System Land and into the crusher for processing on private land. Approximately 30,000 tons of gypsum would be mined annually and would be processed during a six-month period. The processed material would then be stockpiled on the private land for transportation during the remaining months of the year. Transportation consists of two truck/train units hauling two loads each per day,

six days a week. The mining operation would operate on a small-scale basis (1,000 tons per year) for the first three to four years. The crushing unit would not be located on site during that period of time and the company would haul bulk gypsum without crushing it on site.

Currently, H.E. Davis & Sons also has an approved operating plan and gypsum mine on the National Forest approximately 5 miles to the south on their Henry 1 & 2 claims in Section 19, T. 15 S., R. 1 E, SLM which may be mined for two more years.

C. PURPOSE AND NEED

The purpose of the proposed actions is to approve mining of gypsum from the claims for sale of the product at a profit. The gypsum will be mainly used for dry wall and fertilizer. The claim holder has the right to develop the mineral resource, specifically gypsum, by the United States mining laws (30 U.S.C. 21-54); however, the operations shall be conducted so as to minimize adverse impacts on the National Forest System surface resources according to 36 CFR part 228 subpart A and consistent with the Land and Resource Management Plan, Manti-La Sal National Forest, 1986.

Forest Plan Objectives

The Manti-La Sal National Forest management goals for mineral resources as stated in the Land and Resource Management plan (p. III-4) are:

1) Provide appropriate opportunities for and manage activities related to development and production of mineral resources.

2) Ensure that adequate reclamation of disturbed areas is accomplished.

The objectives or desired future conditions of the Forest are (p. III-12):

1) Areas not withdrawn from locatable mineral location would be open and available for development of mining claims.

2) Surface disturbing mining claim exploration and development activities would be evaluated and approved subject to site-specific environmental analysis.

The Forest Wide Direction is to minimize, or as appropriate, prevent adverse impacts on surface resources (p. III-35).

The project area does not lie within an Inventoried Roadless Area, or unroaded area of 1000 acres or more adjacent to an Inventoried Roadless Area.

Most of the operation, including the crushing and hauling portion, would be located on private land owned by the operator. About one third of the upper end of the pit would occur on National Forest System Land. This portion of the quarry (approximately 2 acres) is designated as part of a General Winter Range Management Unit of the Forest Plan. Management direction here is to "modify, delay, or deny surface occupancy, where applicable, if it causes unacceptable stress on big game or unmitigated environmental impacts", Forest Plan page III-62. References to denying surface occupancy are intended only for certain leaseable mineral activities.

Denying surface occupancy is not an option for locatable mining operations, as this proposal is covered under 36 CFR 228.5.

D. DECISION TO BE MADE BY RESPONSIBLE OFFICIALS

The decision to be made by the Forest Supervisor is to approve the Plan of Operations as submitted or to approve a modification of the Plan of Operations that would minimize adverse environmental impacts in accordance with Federal Regulations 36 CFR 228, Subpart A. In addition, the responsible official must determine how much bond is required to ensure reclamation consistent with the approved plan of Operations. The Forest Service will collect and administer the reclamation bond. The Forest Service will also conduct any wildlife monitoring deemed necessary.

E. PUBLIC SCOPING

Internal scoping for this project included review by various Forest Service resource specialists (11-19-97, 12-15-97 and 1-15-98). External scoping consisted of a legal notice in The Pyramid newspaper located in Mount Pleasant, Utah (August 27, 1997), The Times newspaper located in Nephi, Utah (August 27, 1997), listing in the Forest's *Schedule of Proposed Actions (September 1997)*, and by letter to several interested parties (State of Utah Div. of Wildlife Resources and Juab County Commissioners). Those individuals to whom letters were mailed included: Federal, State, and local governmental or land management entities; environmental and interest groups or businesses; adjacent landowners; range permittees; and others known to be potentially interested or affected. A 14-day comment period was allowed for responses. Project status has been continuously listed in the Quarterly List of Proposed Actions.

Field reviews were conducted with several interested groups. Robert Garrett of the Juab County Road Department reviewed the proposal (11-7-97) concerning the trackway and state road approach. He had no concerns. John Fairchild of the DWR was on site 11-7-97 and provided written comments in a letter to the FS dated 11-27-97 regarding mining effects to winter range for deer. Lawrence Brough, who is president of the Levan Land Company, reviewed the project. Levan Land Company owns private land affected by the proposal. Levan Land Company, comprised of 24 members, runs cattle on the respective Forest Service grazing allotment. H.E. Davis and Co. has contacted the Levan Land Company to negotiate a ROW for their access to the quarry effects. Stan Andersen, Sanpete Ranger District, consulted with John Muck of the USFWS concerning potential impacts to golden eagles, (refer to Appendix E).

Issues that were developed and formulated from these responses from the public and the IDT specialists's responses were: soil erosion from the access road, loss of winter range for mule deer, disturbance to nesting golden eagles by mining activities, air quality, safety concerns, threatened and endangered species, noxious weeds, cultural resources, recreation, and visual effects.

F. ISSUES

Issues are derived from review of the proposed action that was developed in response to the identified purpose and need. From public comments received and internal scoping conducted three issues were identified. These issues are the basis for the project analysis, project design features (or mitigation), alternatives, and overall disclosure of information in this document and supporting project record. Issues are categorized into: Identified Issues (issues evaluated in the document), and Issues Resolved Through Mitigation or Design.

General or supportive comments and comments outside the scope of this project analysis are dismissed from further consideration in this document.

IDENTIFIED ISSUES

The following are issues that were identified during the scoping process:

1) Soil Erosion From The Disturbed Area/Access Trackway Could Affect Water Quality in Chicken Creek
2) Loss of Winter Range for Mule Deer
3) Disturbance to Nesting Golden Eagles By Mining Activities
4) Potential Impacts to Visual Quality

1) Soil Erosion From The Disturbed Area/Access Trackway) Could Affect Water Quality in Chicken Creek

Evaluation Criteria: (1) sediment release to Chicken Creek and (2) potential affect to aquatic wildlife.

The operator flagged a desired alignment to access the quarry with a D8 dozer, a track mounted drill and a four-wheel drive pickup. In considering the proposal, several concerns were identified, including (a) steep slopes, (b) highly erosive soils, and (c) appropriate road design.

The slopes over which the access is planned are steep (70 percent) and erosive. Construction would be difficult due to full bench template and resource protection would need to be considered.

2) Loss of Winter Range for Mule Deer

Evaluation Criteria: (1) area potentially avoided by wintering deer and (2) percent of winter range affected.

This could result from (a) the bench area above the quarry being eliminated, (b) noise and disturbance displacing the deer, and (c) acres of winter range being lost. Development of the gypsum quarry would displace

deer that currently use the bench area for their center of activities. Disturbances from the blasting and operation of heavy equipment may disrupt their normal activities.

3) Disturbance to Nesting Golden Eagles By Mining Activities

Evaluation Criteria: (1) number of occupied nests and (2) acres of habitat affected.

Golden Eagle nesting sites are known to occur on cliffs of the canyon slopes within the vicinity of the quarry. The sensitive period for golden eagle nesting runs from February 1 – July 15.

4) Potential Impact to Visual Quality

Evaluation Criteria: whether or not the Forest Direction Visual Quality Objectives are met.

The present landscape, as seen from Forest Service Road #0101 up Chicken Creek, exhibits a very noticeable level of modification in the form of roads and mining activity with associated cut/fill scars. The mining operation would change the visual quality of the area as viewed from Chicken Creek Canyon. The Forest Plan, as amended, (Page III-62) states:

Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.

ISSUES THAT WOULD BE RESOLVED THROUGH MITIGATION AND DESIGN

Potential Impacts To Safety

Mining activities, blasting and hauling along the associated county road may affect the safety of other forest users traveling the same roads. Project requirements reduce safety hazards. The operator must comply with the terms and conditions of the plan of operations to operate on any county or forest development roads, including any provisions for traffic safety, as well as, Mine Safety and Health Administration requirements (MSHA) for mining and blasting (ref.: Appendix B stipulations).

Potential Impacts To Noxious Weeds

The project activities may increase the risk of noxious weed establishment through vehicular traffic and ground disturbance in the area. There are measures in the plan of operations that require the company to use weed free certified seed and hay for reclamation and to properly treat any areas with noxious weeds (ref.: Appendix B Reclamation Plan stipulations).

Potential Impacts to Cultural Resources

The Forest Service has been communicating with the Navajo Nation between December of 1997 and January of 2000. A cultural survey was conducted in the Fall of 1997 by District Archeologist Barbara Blackshear with a report of "no effect on NFS Lands" being determined.

Potential Impacts to Recreation

Impacts were considered upon campers, hikers, hunters, fisherman, and the public who may happen to drive through the affected area. Since mining will be conducted in the winter, little effect will be felt by any of these recreational pastimes. The Chicken Creek campground is seldom used in winter and is located several miles from the quarry. In fact, the Forest Service seriously considered decommissioning the campground because of its very low usage. Likewise fishermen are rarely if ever seen on Chicken Creek in the summer, let alone the winter season. The area surrounding the creek consists largely of thick brushy foliage, acting as a deterrent to foot travel. Two fishing ponds lie further beyond the creek and are not near the quarry. There is little hunting done in the area and it is likely that the company personnel themselves will be hunting during the season. The mining itself will be sporadic; it is estimated that 75% of the time the mine will be vacant in the winter. Shotblasting is usually infrequent and intermittent, normally being conducted in the early spring (March or April). It is for these reasons that recreational disturbances are determined to be of small consequence.

Potential Impacts To Air Quality

Air quality may be degraded by construction, mining and blasting activities. The proposed project is within Juab County. This county is currently within the prescribed attainment levels of PM10 as determined by the National Ambient Air Quality Standards (NAAQS). PM10 is a pollutant, which can be caused by dust, smoke, and fuel combustion.

Air quality in the vicinity of the project is generally good and meets NAAQS standards because of the project elevations (5,500 feet to 6,500 feet) along the Wasatch Plateau combined with topography, rural setting, and prevailing westerly winds.

The project would be within the required parameters of the State of Utah's air quality levels for such programs and standard stipulations for dust abatement would be incorporated. The company has consulted with the State of Utah Dept. of Environmental Quality, Air Quality Division and has met the required standards and thresholds for non-permitting purposes. If at any time the project exceeds air quality thresholds, then the company is required to submit the necessary state permits. Forest Plan direction requires compliance with State and Federal Air Quality Levels.

The Forest Plan, as amended (page II-56) states that "the role for the FS is to coordinate efforts with state and federal agency air quality control efforts" and "to meet State and Federal air quality objectives" (page III-43).

CHAPTER 2

DESCRIPTION OF ALTERNATIVES

A. INTRODUCTION

This chapter presents the alternatives considered for implementation, features common to action alternatives, alternatives considered but not further analyzed, and a comparative summary table of the alternatives considered for implementation responding to the identified issues.

B. THE FOLLOWING ALTERNATIVES WERE EVALUATED IN DETAIL

TABLE 2-1: LIST OF ALTERNATIVES

Alternative A - No Action. Non-approval of Plan of Operations
Alternative B - Approval of Plan of Operations as submitted by the operator

ALTERNATIVE A - No Action - This alternative would be non-approval of the plan of operations and subsequently no mining. This is probably not a legal alternative as the claim holder has a right under the 1872 mining law to develop this locatable mineral resource (30 USC 21-54) but, by law, is displayed for comparison to the action alternative.

ALTERNATIVE B - Approve the Plan of Operations as submitted by the Operator. A copy of the submitted Plan of Operations is included in Appendix B.

Comparison of Alternatives - Under Alternative B, the operator has incorporated mitigation measures he feels are needed to address environmental concerns. Such measures include: storing gypsum tailings on private ground, sloping of surfaces to allow natural drainage, storage of blasting powder in MSHA approved powder magazines, containment berms for fuel tanks, proper storage and handling of stripped topsoil, and reclaiming and reseeding of exposed surfaces upon mine closure. Also, there should seldom be fugitive dust emanating from road activity or the crushing process since winter moisture and snowfall will suppress dust emissions; however, if water is needed there will be water trucks and spray equipment available.

C. ALTERNATIVES CONSIDERED BUT NOT FURTHER ANALYZED

An alternate access route to the mining claims was proposed and reviewed in the Summer/Fall of 1997. This route traversed westward the length of the ridge off of the Chicken Creek Road (FSR 0101) from above the

claims. This route would have greatly increased the length of access road and the amount of disturbance. This would have increased the possibility of disturbing more golden eagle nests in the adjacent Pigeon Canyon, as well as, affecting more wintering habitat for mule deer. Another access route was considered and located approximately 200 feet to the west of the current mine disturbance, but this route proved to be too steep (> 30%), traversed directly across the outcrop, and was considered not feasible nor safe.

The trackway currently in the Plan of Operations was considered by the Forest Service and operator and adopted by the operator. Negotiations between the Forest Service and operator were conducted successfully and the operator agreed to alter his original Plan of Operation to include sediment control, monitoring of wildlife, timing restrictions if determined necessary based upon monitoring, and reclamation. There was no need to evaluate a third alternative (Alternative C) that would include additional mitigations.

D. COMPARISON OF ALTERNATIVES

Table 2-2 compares the alternatives by major components of the Plan of Operations, compliance with the mining laws, surface disturbance, and the issues.

TABLE 2-2: COMPARISON SUMMARY OF ALTERNATIVES

Components of the Alternatives	Alternative A	Alternative B
Amount of Trackway (on forest system land).	0	1,000 feet
Percent of road grade (on forest system land).	0	15%
Total Disturbance	0	4.6 acres
Responsiveness to Purpose and Need	**Alternative A**	**Alternative B**
Complies with the 1872 Mining Law Economic Benefits	No None	Yes Operator would receive economic benefits of his operations. Benefits to surrounding communities would be low.
Issue: Soil Erosion of Disturbed Area/Access Trackway	**Alternative A**	**Alternative B**
Sediment release into Chicken Creek Potential affect to aquatic wildlife	No Change No Change	Negligible Negligible
Issue: Mining Effects to Mule Deer Habitat	**Alternative A**	**Alternative B**
Area potentially avoided by wintering deer	No Effect	500 acres

Percent of available winter range affected	No Effect	3%
Issue: Mining Effects to Golden Eagle Nesting	**Alternative A**	**Alternative B**
Occupied nests within ½ mile radius	2 historical nests. None found in 1998 survey. No Effect	May Impact. Eagles could be displaced to other nests in the territory. If monitoring reveals nesting eagles within 0.5 miles, timing restrictions would be imposed on the operations.
Acreage of habitat potentially affected	0	500 acres
Issue: Potential Impact to Visual Quality	**Alternative A**	**Alternative B**
Whether or not the Forest Direction Visual Quality Objectives are met	Yes	Yes, within the ten-year period

No Effect – There would be no change to existing trends/conditions caused by the alternative.

High Effect – The evaluated project could cause a noticeable/measurable change to the discussed issue/resource category sufficient to be a concern and change existing trends (not significant as defined under NEPA).

Moderate Effect – The evaluated project could cause a noticeable/measurable change to the discussed issue/resource category sufficient to be a concern but would not change existing trends.

Low Effect – The proposed project could cause a noticeable/measurable change to the discussed issue/category but not sufficient to cause concern or change existing trends.

Negligible Effect – Any change caused by the evaluated project would be noticeable or measurable relative to existing conditions/trends.

CHAPTER 3
AFFECTED ENVIRONMENT

A. INTRODUCTION

This chapter summarizes the resources of the affected area, with emphasis on the issue topics.

This analysis tiers to the Manti-La Sal National Forest Land and Resource Management Plan (Forest Plan) and incorporates by reference the analysis disclosed in its Final Environmental Impact Statement and Record of Decision, 1986, as amended. Relevant Forest-wide and management area goals, direction, and standards from the Forest Plan are incorporated in this analysis and are further discussed in this chapter.

The proposed quarry is located in the San Pitch Mountains just east of Levan, Utah. The town of Levan is a small rural community with a population of 416 people. The Manti-La Sal NF Land and Resource Management Plan (Forest Plan) emphasis for this area is General Big Game Winter Range (GWR) page III-61. These are areas that big game traditionally use during the winter. Other uses may occur so long as it does not conflict or cause unacceptable stress on wildlife and the activities or rehabilitation of the activities emphasizes habitat maintenance or enhancement.

The Canyon has a graveled road (Forest Service Road #0101) that is maintained by Juab County and is kept in good condition year-round. The proposed quarry is located on a steep south-facing slope overlooking the county road. The project site is sparsely vegetated with gamble oak, bitterbrush and mountain mahogany shrub interspersed with some mature juniper and bunchgrass.

The proposed quarry is well outside of inventoried roadless areas and is north of a county maintained road, Chicken Creek Road (FSR #0101), which bisects the unroaded lands on both sides (north and south).

B. AFFECTED ENVIRONMENT

General Setting (Geology, Soils, Vegetation)

The San Pitch Division covers the northern part of the Gunnison Plateau, also called the San Pitch Mountains. The maximum elevation of the San Pitch Mountains is 9,994 feet. This north trending ranges averages 8-12 miles in width in which only the northern part of approximately 30 miles is on the National Forest System Lands. This area consists of rugged foothills and mountains and a steep western plateau with a steep western escarpment. From the eastern margin of the central plateau, the terrain drops abruptly to form the eastern front of the range. The narrow northern end of the San Pitch Mountains is a continuation of the western escarpment.

Sedimentary strata exposed in the San Pitch Mountains range from Jurassic to Tertiary in age. Shale, sandstone and limestone predominate, along with conglomerate, gypsum and siltstone. This mountain range lies in the Utah Thrust Belt, which is structurally complex. Normal faults bound the eastern and western fronts. The

Levan anticline is on the west end of the San Pitch Mountains. The complex folding and faulting of the San Pitch Mountains is probably from a combination of thrust faulting and the collapse of salt diapers. The gypsum deposits are formed from hydrothermal replacement deposits due to such deformational processes along the thrust belt.

The proposed gypsum quarry is on a steep (70+%) south-facing slope. The gypsum deposit is exposed as a rock outcrop, and is surrounded by weakly developed, droughty soils formed from the surrounding shale and colluvium. Most of the soils are shallow and have rapid runoff. Topsoil is very thin to non-existent in this area.

Much of the area is bare or sparsely vegetated. Reclamation activity would not be expected to introduce any more vegetation than what currently exists naturally.

Wildlife

A 1997 report by the Utah Division of Wildlife Resources stated that, historically, there have been five known Golden Eagle nests along cliff faces in the vicinity of the mine project which probably represents one nesting pair (ref. DWR Pederson, 11-17-97). Two of these nests are within ½ mile of the proposed gypsum quarry. In reviewing these same five nesting sites in 1998, Stan Andersen of the USFS reported that no eagle nests were found in the four historical nest sites located south of Chicken Creek in sections 33 and 34. Likewise, no nest was discovered at the fifth historic nest site that was located across Pigeon Creek, less than a mile north of the proposed gypsum mine and separated from this mine by a steep ridge. As of 1998 a new sixth nest was located in the NE ¼ of section 34 approximately ½ mile northeast of the proposed gypsum mine, but it also lies over the ridge and bore no signs of nest tending (ref. S. Andersen, 3-25-98).

The mining claims are located within a mule deer winter range that encompasses an area of approximately 16,000 acres along the western flank of the San Pitch Mountains. Deer bed down on the 10 to 20 acre bench above the quarry and move onto the steeper slopes to feed. The site has a southern aspect and is relatively snow-free during the winter months. The winter range time extends from December 1 – April 15th. For wintering deer, the edges of timbered areas atop the ridge act as security to hide from activities and predators.

Stansbury cliffrose and birchleaf mahogany are present on the site and show evidence of moderate use by mule deer during the winter. The amount of foraging habitat at the site is, however low compared to better habitat to the east and west. Foraging on the mine site is probably done by deer in transition to one of these other areas (ref. S. Andersen, 12-1-97).

Some wildlife monitoring has been done on the Henry #1 and #2 gypsum mine located approximately 5 miles to the south of the Chicken Creek gypsum mine. Evidence of deer can be found on the mine site and adjacent hills, indicating that with time the deer become habituated to the mining activities. Conditions would likely be similar at the Chicken Creek Mine because the terrains are similar. Since operations are already occurring on the private lands at the H.E. Davis' #3 and #4 (Chicken Creek Mine), some avoidance and habituation by mule deer to the mining activities have likely occurred.

Wildlife and Fish Resource Management in the Forest Plan states on page III-62:

(01) Provide big game habitat needed to achieve the big-game population objectives identified in interagency herd unit plans.

a. Maintain at least 30% of shrub plants in mature age, and at least 10% in young age classes.

b. Maintain at least two shrub species on sites capable of growing two or more shrub species.

c. Maintain habitat capability at a level at least 50% of the potential for big game.

d. Activities or uses which induce human activities within the area may be modified, rescheduled, or denied if the combination of accumulated impacts on vegetation, behavior, and/or mitigation reduce effective habitat use below 80% of the base year 1980 capacity for this unit.

The Forest Plan, as amended, (Page III-62) also states:

(01) Modify, delay or deny mineral leasing, exploration, and/or surface occupancy, where applicable, if they cause unacceptable stress on big game or unmitigated damage to their habitat.

a. Prohibit activities during critical periods of big-game use.

b. Approved activities must be short termed and prompt reclamation must be assured.

The Chicken Creek quarry area is part of the Levan Land Livestock Company, which is authorized to graze a total of 92 head of cattle from the months of June 25 thru- August 25. Forest Plan direction on page III-62:

(01) Manage livestock grazing to compliment big-game habitat

a. Establish proper use criteria that should maintain or enhance habitat for wildlife. Limit livestock use to this level.

Threatened or Endangered Species

There are no listed Threatened or Endangered species of plants or animals affected by the proposal (USDA Forest Service, 1991a). There are no sensitive species affected by the proposal (ref., BE/BA, Appendix C).

Water Quality of Chicken Creek and Associated Aquatic Wildlife

Chicken Creek is a perennial stream that drains the west slope of the San Pitch Mountains, flowing into Chicken Creek Reservoir and then onward to the Sevier River. Currently the creek supports recreational and agricultural uses. The Utah Division of Water Quality (Utah Administration Code R317-2, page 22) numerically rates Chicken Creek as follows:

1. "2B" - Protected for secondary contact recreation such as boating, wading, or similar uses.

2. "3A" - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organism in their food chain.

3. "4" - Protected for agricultural uses including irrigation of crops and stock watering.

Visual Quality of Chicken Creek Canyon

The present landscape, as seen from Forest Service Road #0101 up Chicken Creek, exhibits a very noticeable level of modification in the form of roads and mining activity with associated cut/fill scars. The mining operation would change the visual quality of the area as viewed from Chicken Creek Canyon.

Sections of the operation are located within an area having the visual quality objective of partial retention, meaning that the result created by mining must appear visually subordinate to the naturally appearing landscape and appear as a natural occurrence. Using the visual quality map found in the Forest Plan, it appears that this middle ground view of partial retention is defined as the viewshed seen from the more populated area to the immediate west, including the town of Levan.

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

This chapter identifies the projected impacts from implementing the alternatives considered in detail, presented in Chapter 2. This chapter discloses both the potential direct/indirect effects and cumulative impacts for Identified Issues. Direct/indirect effects are those effects that would likely occur during or shortly after implementation of a specific alternative. Direct/indirect effects are presented by resource topic corresponding to the issues identified in Chapter 2. Cumulative impacts are those effects, which may occur with implementation of an alternative combined with other past, present, or reasonably foreseeable actions.

TABLE 4-1: LIST OF ALTERNATIVES

Alternative A - No Action
Alternative B - Approval of Plan of Operation as Submitted by the Operator

B. DIRECT AND INDIRECT EFFECTS OF IMPLEMENTATION BY ALTERNATIVE

- *I. Concerns About Potential Impacts of Soil Erosion From The Disturbed Area/Trackway*
- *II. Concerns About Potential Impacts to Mule Deer from Loss of Winter Range*
- *III. Concerns About Potential Impacts to Nesting Golden Eagles By Mining Activities*
- *IV. Concerns about Visual Quality*

I. Concerns About Potential Impacts of Soil Erosion From the Disturbed Area/Trackway

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan

This alternative would be consistent with objectives for protection of resources but would not be consistent with the Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor with

FLPMA section 102(a)12 which states "that public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The road originally proposed by the operator would most likely fail given the highly erosive soils and steep slope of the project area (FS engineer's report of 12/9/97). There would be a high risk of the outslopes of the road failing since mine road berms are required by MSHA standards. Such failures would displace soil downhill with the potential to discharge into the stream and affect water quality and aquatics. Recontouring the disturbance during reclamation would be difficult since there would be little to no fill material available to recontour back to original slope. Increased sedimentation may endanger fish and other organisms, possibly affecting respiration, spawning, visual acuity, and degradation of macroinvertebrate habitat. The creek also supports recreational and agricultural uses.

If the proposed access is to be considered a road, it would have to meet Forest Service and MSHA standards. These standards require a 12-foot wide road with additional width for MSHA standard berm height. No more than an 18 percent grade could be allowed. If the proposed access is considered a trackway for equipment access, MSHA berm heights no longer apply and the grade can be increased. The access would be temporary during mining operations and would require heavy maintenance and special considerations for construction for resource protection.

Forest Service concerns regarding the originally proposed road resulted in a conference call with the Ranger District and the Manti-La Sal National Forest engineering staff. After careful consideration of the above concerns, the consensus was that a trackway would be the most environmentally acceptable solution to meet the operator's needs. It may not even be possible to construct a road in the location to meet MSHA standards because of the steep terrain. The length of road would be extensive with the road switch backing on it. A haul road is not needed because the gypsum ore would be pushed and moved by gravity to the crusher at the bottom of the slope and then transported on the County Road (FSR 0101); access up the slope is needed for mining equipment only. The trackway would be reclaimed following operations.

The trackway proposed in this alternative was adopted by the operator in the Plan of Operations /Reclamation Plan (map #2), virtually eliminating the concern regarding road failure and erosion of the highly erosive soils and steep slopes (30-70%) of the project area. Erosion and subsequent sedimentation would be contained within the project area while sediment catch basins would reduce sediment contributions to the adjacent undisturbed areas and Chicken Creek to negligible levels relative to existing conditions (ref., USFWS report, D.Okerlund, 1-21-98). Mitigation measures/ requirements require end-hauling of the fill material during the construction phase (rather than pushing over the outslope side). Drainage structures (rock check dams) would be constructed every 20 feet on the trackway and the end-hauled material would be stored at the quarry bottom on private land for later reclamation recontouring purposes. There would be sediment catch basins on the private land to catch and properly dissipate runoff. There would be no mine road berms to fail since a trackway does not have to meet the parameters of MSHA regulations. Recontouring the disturbance during reclamation would be less difficult since there would be fill material available to recontour back to original slope.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards and goals (page III-2).

II. Concerns About Potential Impacts to Loss of Winter Range for Mule Deer

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with management of big-game habitat but would not be consistent with the Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "that public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

Mining activities such as blasting, dozer work, and truck hauling could displace and disperse the mule deer from their winter habitat in the Chicken Creek Canyon area. Actual ground disturbance from the mining (4.6 acres) would eliminate part of a bench that the deer use to forage and bed down. This would last for the life of operations. In regard to disruption of foraging opportunities, the amount of foraging habitat on the mine site is nearly negligible since much better habitat exists east and west of the mine (ref. S. Andersen, 12-1-97).

Observations around the Henry #1 and #2 gypsum mine 5 miles south of Levan in the same type of terrain/vegetation indicate that this mining would not greatly affect the deer since normal winter patterns (snow) causes intermittent mining during the winter months that the deer can tolerate. The impacts to deer at Henry #1 & #2 Mine appear to be minimal since they have become accustomed to the mining operation (Andersen Report, 12-1-97).

It is expected that the impact upon deer would be even less at the Davis #3 and #4 (Chicken Creek) mine site because of the smaller area of disturbance and poorer quality of habitat. The area potentially avoided by wintering deer is estimated to be between 125 to 500 acres, or a maximum of 3 % of their winter range of 16,000 acres in the western flank of the San Pitch Mountains. This determination was based upon a range of a 0.25 to 0.50-mile radius from the mine site. It is expected that wintering animals would become accustomed to the activities and thus re-enter the area, as has occurred at the Henry #1 and #2 Mine. Since the Chicken Creek

Mine is already operating on the private lands, some of the anticipated effects and habituation by wintering animals may have already occurred.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards.

III. Concerns About Potential Impacts to Disturbance of Nesting Golden Eagles By Mining Action

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with management of habitat but would not be consistent with Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The timing of the mining activities as proposed by the operator from October through the winter season could directly effect use by the eagles. The sensitive period for golden eagle nesting runs from February 1 - July 15. The area potentially avoided by nesting Golden Eagles, considering a radius of avoidance of 0.5 miles, would be 500 acres. Any nesting pair would most likely select nesting sites outside of this area.

Golden Eagles are not listed as Endangered, Threatened, or Sensitive species; however, they are protected under the Eagle Act (16 USC 668). The Reclamation Plan includes Forest Service monitoring of the eagles to determine if a pair of eagles occupies a nearby nest. The DWR and USFWS would then be notified and consulted on a course of action. If a nesting pair were found within the 0.5 mile radius, a timing stipulation would be implemented to limit mining activities from February 1- July 15 to ensure that the golden eagles can nest and successfully rear their young. This would comply with the Eagle Act (16 USC 668).

A biological analysis determined that other wildlife species will not be substantially affected by the alternatives (refer to the Biological Assessment and Biological Evaluation for a more thorough discussion.)

Consistency with NFMA and the Forest Plan
This alternative would be consistent with NFMA and the Manti-La Sal National Forest Management Plan standards.

IV. Potential Impact to Visual Quality

Alternative A

No effect. Current conditions discussed in chapter three.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with the Forest Plan's management of visual resources (page III-2) but would not be consistent with Forest Plan (page III-93) "manage mineral activities to be compatible with the authorized use" nor FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

Alternative B

The operation is located within an area having the visual quality of partial retention. Neither the quarry nor the trackway are within view of any populated area including the town of Levan. The quarry access would be partially screened by vegetation found adjacent to Forest Service Road #0101 as one travels up or down the canyon. Long duration terminal or line-of-sight views would be limited. Visitor use in this area is primarily drive through. Designated foreground views begin further up the canyon road where it nears the Forest Boundary, well to the east of the quarry. The Forest Plan, as amended, (Page III-62) states:

(01) Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.

The VQO would be met within 10 years of permitting by proper reclamation of the disturbance on National Forest System Lands, after the ore body is exhausted. Mining rights as prescribed under the 1872 Mining Law could take precedence if the mineable gypsum ore extraction exceeds ten years. Reclamation measures would help ensure that VQOs are met.

Consistency with NFMA and the Forest Plan
This alternative would be consistent with the Forest Plan's management of mineral resources (page III-4) and FLPMA section 102(a)12 which states "the public lands be managed in a manner which recognizes the nation's need for domestic sources of materials".

C. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitments are permanent and cannot be reversed once operations commence or decisions allowing such operations to commence are implemented. Since gypsum deposits are not renewable within a reasonable time span, removal and consumption of such minerals is an irreversible commitment of this

resource. Other sources such as fuels and electricity used to produce gypsum ore bodies would also be irreversibly committed.

Since soils would take many years to replace under natural conditions, the loss of soils at the mine through erosion can be considered an irreversible commitment. Topsoil can be replaced in small areas to provide a suitable growth medium for vegetation. Vegetation can be reestablished on sites within a reasonable period of time and is not considered irreversible.

Irretrievable commitments are those resources, which are lost for some period of time and can be replaced. For example, vegetation removed from the site cannot be put back on the site in its original state, so the loss is irretrievable. Vegetation is a renewable resource and can be re-established on the site in a similar pattern within a reasonable period of time (human lifetime).

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES FOR EACH ALTERNATIVE COULD BE AS FOLLOWS:

Alternative A

No effect.

Alternative B

Gypsum ore produced and the resources consumed by the mining project would be irreversibly committed and not available for use by future generations.

The losses of vegetation and effects to other resources such as wildlife (deer populations) and visuals would be minimal until the mining activities cease and the site is reclaimed and vegetation is replaced. Gypsum mining could last for 5-20 years at this site.

Any sedimentation which is not properly or adequately remedied could result in an irretrievable loss of water quality, aquatic wildlife, and vegetation. The probability of sediment or contaminants being introduced into Chicken Creek would be decreased to a minimal level due to the sediment control measures, recontouring the mining disturbance, mitigation measures, Spill Prevention Control and Countermeasure Plan, timing measures, and project design features.

D. CUMULATIVE EFFECTS

Cumulative effects are discussed for this proposal with the assumption that the Plan of Operations would be approved under the terms of the mining laws. Cumulative effects are discussed with respect to the drainage of

Chicken Creek, where the quarry is located and also from a much broader perspective of the San Pitch Mountain Range.

This section discusses the cumulative effects. Past, present, and reasonably foreseeable future activities in the areas for the next 20 years are displayed on Tables 4-2 through 4-4.

Chicken Creek Watershed

There is currently an active gypsum mine in the canyon just ½ mile below (west) and across the canyon (south) from the proposed site. Geneva Rock of Orem, Utah (formerly Gunnison Gypsum Corp. of Spokane, Washington) operates this mine. This operation is approximately 7 acres in size, partially on private land and partially on the National Forest System Land.

There are also at least two other potential quarry sites in the canyon below the proposed extension of the Chicken Creek site where some past gypsum mining has occurred. With the current demand for gypsum, it is anticipated that all of these gypsum ore outcrops would eventually be mined. If so, then it may be anticipated that there would be some cumulative effects as these mining operations have the potential to increase to an estimated total of 25 to 30 acres. This would depend on future circumstances and demand for gypsum.

San Pitch Division

This seam of gypsum runs through the foothills the entire length of the San Pitch Division on the west side of the mountain range from the town of Nephi to ten miles south of the town of Levan. There are currently three operating gypsum mines in the San Pitch Mountains with the potential to develop 8-10 more gypsum mines on the entire mountain range (including the three mentioned in Chicken Creek Canyon).

The existing mine in Salt Creek Canyon by State Highway 89 is entirely on private land. The other two mines, one in Chicken Creek and one about five miles south of Levan are partially located on National Forest System Lands. Potential cumulative effects involved with expansion of mining would be expected to have a negative effect to visuals and big game winter range if further mitigation were not imposed in the future.

I. Concerns About Potential Impacts of Soil Erosion From The Disturbed Area/Trackway

The potential release of sediment into Chicken Creek by another future mining operation may affect water quality. As with H.E. Davis' proposal and in accordance with Forest Service Best Management Practices, future mine operations would be required to use adequate drainage, waterbars, and sediment catch basins in order for each mine to have negligible effects to water quality and to downstream life. Then the cumulative effects from all four mines should still be negligible; especially in comparison to more serious impacts resulting from natural processes such as large storms, with their accompanying flooding and erosion.

II. Concerns About Potential Impacts to Mule Deer from Loss of Winter Range

The concerns for loss of deer winter range would increase as mining activity increased in the area. The mining in the canyon has currently removed approximately 7 acres of winter range habitat and with the advent of

expanding this quarry would remove approximately 5 more acres of habitat. If other mines are developed, there is potential to remove an estimated 25 to 30 acres in the canyon. These numbers in themselves are not significant, representing 0.2 % of the designated General Big Game Winter Range of approximately 16,000 acres on the west flank of the San Pitch Mountains. We know that disruption of winter range habitat is a function of the intensity of human activity (e.g., noise) during the mining process (Lyon, J.L. 1979). The worst-case scenario would be expected if all four potential areas in the canyon were operating in the winter at the same time. Using the 0.25 to 0.50-mile radius determination from any one mine site, the percent of available winter range affected could vary from 3 to 12 %. This is not the case right now, nor would it be expected that all four mines would operate at the same time (if three mines were in operation concurrently, the percent of winter range potentially affected would be 2 to 9%). Monitoring now and in the future would determine whether further mitigations are warranted.

III. Concerns About Potential Impacts to Nesting Golden Eagles By Mining Activities

The concerns for decrease in eagle nesting is similar to the concerns about impacts to mule deer. Again, eagles could be displaced to other nests, away from the 3 to 12% of area that might be affected by four mines operating simultaneously for any extended period of time. Consequently, monitoring of eagle nesting by the Forest Service would be required as deemed appropriate. Required reclamation and revegetation of disturbance on NFS lands will reduce effects to wildlife habitat.

IV. Concerns about Visual Quality

Disturbance from mining could become more obtrusive as mining operations increase. The visual quality objective for this area is partial retention, meaning that the result created by mining must appear visually subordinate to the naturally appearing landscape and appear as a natural occurrence. Some of the disturbance can be mitigated for visual compliance during and after mining operations; however, light soil colors from the mining activity would contrast with sparse, dark colored pinyon pine and juniper vegetation in the area. The more mining that occurs, the more difficult it would be to meet visual quality objectives currently or into the future.

These mines (Geneva Rock Mine and the H.E. Davis Mine on private) were overlooked during the Forest Land Management Planning Process of 1986. The visual quality objective should have been made compatible with other mineral management areas, which is modification. Modification means that the result created by the activity may visually dominate the natural characteristics of the surrounding view shed, but must appear as a natural occurrence. At present, the mining activity meets the objective of partial retention, but if mining operations continue to develop in the future, as described above, conditions would dictate that the visual quality objective as modification would become a cumulative effect.

CUMULATIVE EFFECTS COULD BE AS FOLLOWS:

Alternative A

No effect.

Alternative B

The gypsum operation would be approved and implemented as proposed. The general winter range around the mine and associated deer herds would be slightly affected, as well as possibly golden eagle nesting. Consequently there will be yearly monitoring of eagle nesting by the Forest Service which may require timing limitations for mine use. Required reclamation and revegetation of disturbance on NFS lands will reduce effects to wildlife habitat (e.g., for deer). Past and present gypsum mining within the surrounding area has and could remove minimal amounts of water and disturb relatively small amounts of vegetation and wildlife habitat. In the past, impacts to sensitive species have been insignificant.

Under the proposal by H.E. Davis, a trackway would be developed. Measures require that access by trackway contain adequate drainage and catchment structures. Concerns about sedimentation into Chicken Creek and thus water quality would be minimized by placement of a drainage control system (waterbars and sediment catch basins) with little or no effects to downstream aquatic life. Natural processes could affect water quality, erosion and sedimentation.

Road access to all sites would remain under current or better conditions. Stipulations require that temporary roads be effectively reclaimed, thereby reducing potential access effects.

Main road access into the site along Chicken Creek would increase in traffic, which could affect the safety (although minimal) of the general public along the roadways. The proposed Reclamation Plan contain stipulations require proper signing and adherence to all traffic and roadway travel rules.

Range management and resources would be coordinated with the current and future other resource activities to minimize conflicts and ensure effective land management. Any losses of forage or livestock would be offset or compensated for.

Over a longer time frame scenario, success could mean additional gypsum mining in the area in the near or immediate future. Air quality and disturbance would be affected as a function of the number of mines and/ or activities to be added. Visual Quality Objectives would be met by using Forest Plan standards and guidelines and BMPs for exploration, development, and production.
The possibility exists that future activities could have a degree of risk for hazardous materials spills directly or indirectly affecting the soil, water, plant, and fisheries resources. Proactive and response measures are developed and implemented in a Spill Prevention Containment and Countermeasure Plan (SPCC). A SPCC is required for this project.

The current proposed mine would not make a significant positive nor negative economic impact on the surrounding communities. Long-term development of the area could slightly increase the income of local communities, i.e. Levan and Nephi through supplies of resources, lodging, food and employment of 1-5 people.

TABLE 4-2: SUMMARY OF PAST ACTIONS

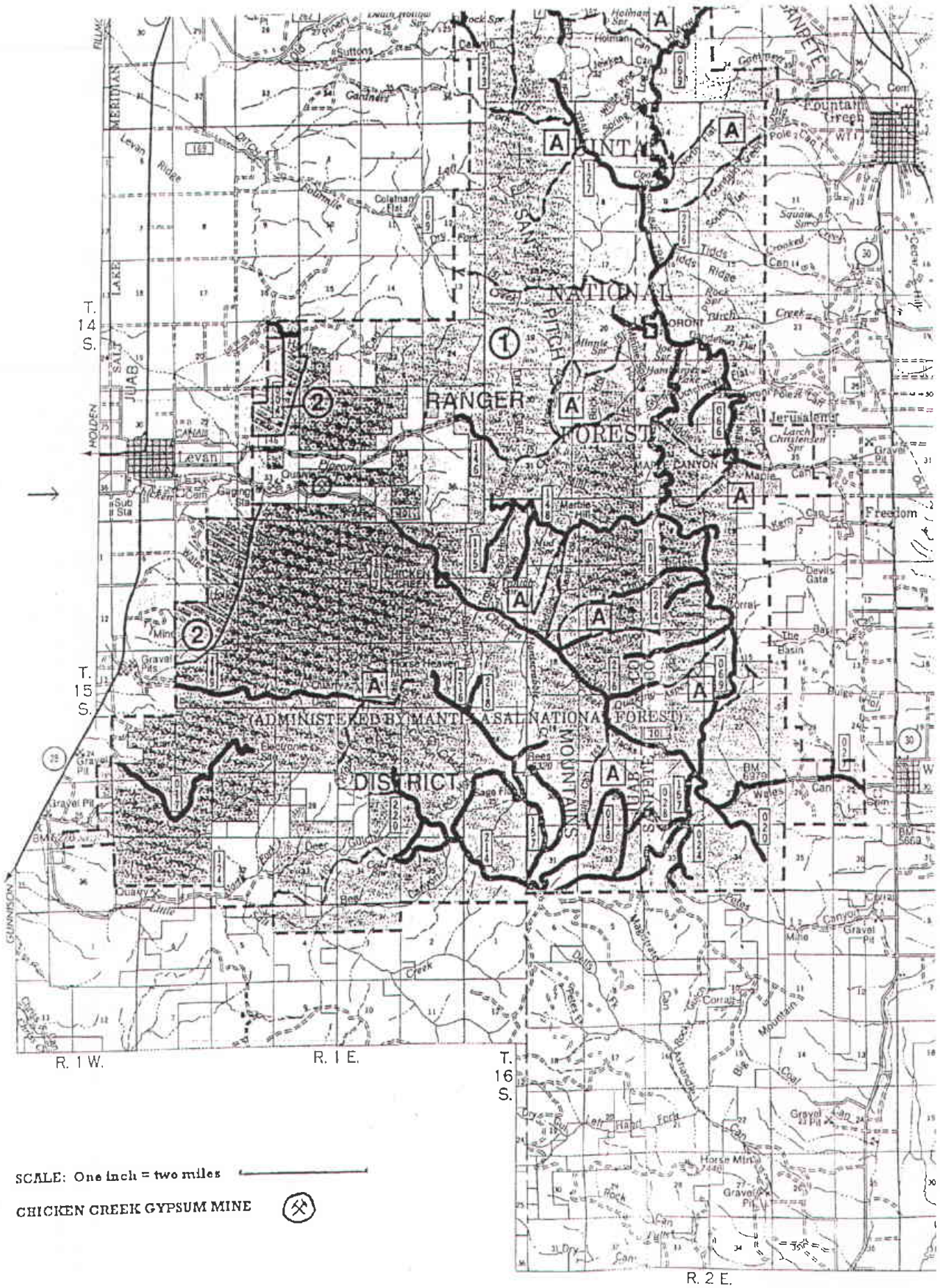
ACTION	DATE	RESIDUAL EFFECTS
WATERSHED Chicken Creek restoration- reroute of stream, placement of rip-rap, graveling of road.	1983-84	Increase in water quality and decrease in sedimentation of Chicken Creek after large flood event. Stream bank stabilization.
RANGE Levan Land Livestock Co. C&H Allotment – with 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions. Actual mine site on NFS lands is unsuitable for grazing.
RECREATION Deer and Elk Hunting, Dispersed Recreation, and fishing along Chicken Creek upstream above the site. Use is moderate during the summer at Chicken Creek Campground, hunting seasons, and less during the wintertime.	Hunting seasons in later summer and fall. Dispersed recreation year round, with greatest activity during hunting seasons.	Human activity in winter consists of snowmobiles, x-country skiing. Most activity in summer season with peaks during hunting seasons. Human activity disperses wildlife. User created roads, Forest Development Roads, and dispersed camping sites are low in vegetation production. Some erosion and sediment production from already disturbed areas.
CULTURAL RESOURCES	Various activities, projects	All proposed projects with ground disturbance " undertakings" require survey, evaluation and protection
MINERALS Pre-H.E. Davis proposal gypsum mine on private land. Robert Steele and then Gunnison Gypsum conducted gypsum mining on Security #1-4 mining claims, which is down and across the canyon from current proposal.	1950s-1980s 1980's to present	Site was previously worked as gypsum mine on the private land. Site is naturally low in vegetation. Some erosion and sediment production from already disturbed areas.
TIMBER None		Site is unsuitable

TABLE 4-3: SUMMARY OF PRESENT ACTIONS

ACTION	DATE	RESIDUAL EFFECTS
WATERSHED none		
RANGE Levan Land Livestock Co. C&H Allotment – with more than 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions.
RECREATION Deer and Elk Hunting, Dispersed Recreation, and fishing along Chicken Creek upstream of he site and is used moderately during the summer and hunting seasons, and during wintertime.	Hunting seasons in later summer and fall. Dispersed recreation year round, with greatest activity during hunting seasons.	Human activity in winter consists of snowmobiles, x-country skiing. Most activity in summer season with peaks during hunting seasons. Human activity disperses wildlife. User created roads, Forest Development Roads, and heavily dispersed camping sites are low in vegetation production. Some erosion and sediment production from disturbed areas.
CULTURAL RESOURCES	Various activities, projects	All proposed projects with ground disturbance " undertakings" require survey, evaluation and protection
MINERALS Geneva Rock (formerly Steel and also Gunnison) mining gypsum down and across the canyon from the current proposal.	Geneva bought out project, adopted operating plan and started mining in May 2000.	Disturbance associated with mine construction and drilling, traffic, noise, sedimentation on steep lengthy roads. Some reclamation on going, revegetation, sediment/spill control berms on roads and loadout site.
TIMBER None		Unsuitable for timber

TABLE 4-4: SUMMARY OF REASONABLY FORESEEABLE ACTIONS

ACTION	DATES	FORESEEABLE EFFECTS
WATERSHED unknown		
RANGE Levan Land Livestock Co. C&H Allotment – with 92 cattle during summer grazing season.	June to August, annually	Moderate to heavy grazing. Presence of cattle. Rest rotation grazing system and monitoring assures good range conditions will continue. Actual mine site on NFS lands is unsuitable for grazing.



SCALE: One inch = two miles

CHICKEN CREEK GYPSUM MINE

FOREST SERVICE MAP
Compiled in 1989 at the Regional Office, Ogden, Utah, and the Geometronics Service Center, Salt Lake City, Utah, from USDA Forest Service Primary Base Series Maps and USDI Geological Survey Quadrangles. Limited revision by the Regional Office, Ogden, Utah, 1989

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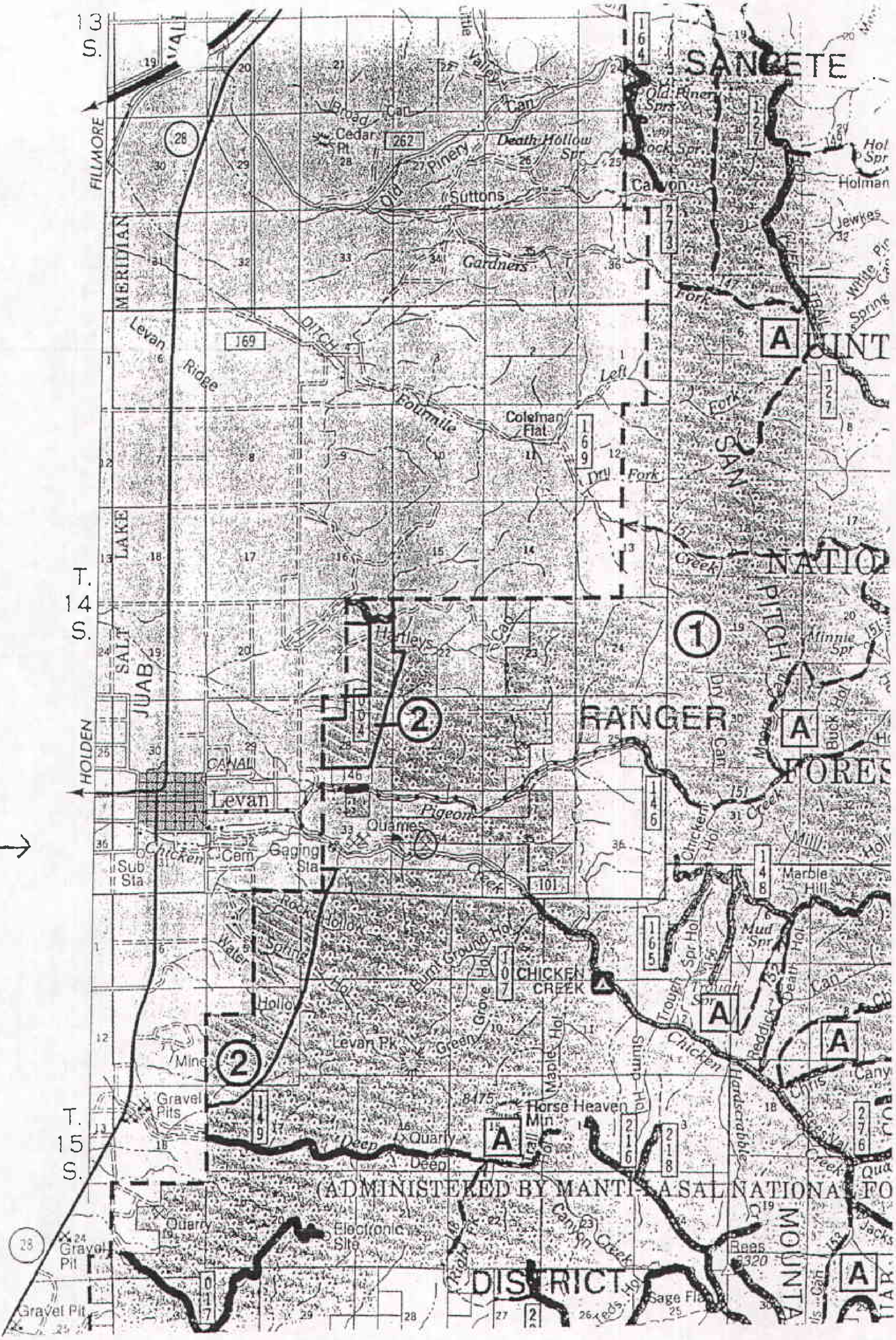
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FILLMORE
MERIDIAN
LAKE
SALT
JUAB
HOLDEN
Levan
Levan Ridge
Broad Can
Cedar Pt
Old Pinery
Death Hollow Spr
Suttons
Gardners
Old Pinery Spr
Rock Spr
Canyon
Holman
Jewkes
DITCH
Fourmile
Coleman Flat
Left Fork
Dry Fork
Creek
SAN PITCH
NATIO
RANGER
FORES
DISTRICT
Hartleys
Minnie Spr
Dry Can
Buck Hol
CANAL
Pigeon
Quames
Chicken
Cem
Gaging Sta
Sub Sta
Rock Hollow
Spring Hol
Burnt Ground Hol
Grove Hol
Green
Levan Pk
Maple Hol
CHICKEN CREEK
Chicken Hol
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Mud Spr
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Hardscrabble
Mine
Gravel Pits
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Canyon Creek
Rees
Sage Flat
Jacks
MOUNTA
Canyo
Chris
Residual Creek
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